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ABSTRACT

Designed for inservice and preservice training, this manual provides information about the ways a traumatic brain injury (TBI) can affect a student's functioning and the ways an educator can intervene to improve the student's chances of academic and social success. The first part of the manual is a trainer's manual and the second part is a participant's packet. Each of the two parts is further divided into sections pertaining to the onset of TBI, the re-entry process, the team approach, and the transition process. The trainer's manual is comprised of a set of detailed lecture materials which include specific instructions for presenting the information to a group of participants. Resource and glossary sections are also included for further references. The participant's packet includes reproducible masters of supplemental materials that pertain to assessment and management. Master copies of overhead transparencies to accompany the lecture presentation are also provided in the participant's packet. The manual has been used extensively in statewide inservice training in Utah and in graduate and undergraduate training at the University of Utah. The materials can be covered in 1-day training workshops, but more easily in a day and a half or a 2-day session. (Contains 53 references.) (CR)

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ED 411 628

TRAUMATIC BRAIN INJURY

TRAINING MANUAL FOR SCHOOL PERSONNEL

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INTRODUCTION

Traumatic Brain Injury: Training Manual for School Personnel is a manual written specifically for inservice and preservice training. The manual provides information about the ways a traumatic brain injury (TBI) can impact a student's functioning and the ways an educator can intervene to improve the student's chances of academic and social success. The intended audience for the manual includes special and general education teachers, school psychologists, school counselors, speech and language pathologists, physical and occupational therapists, nurses, and administrators. Instructors of undergraduate and graduate coursework in education will also find the manual helpful in preparing their students to work in schools with TBI populations.

The manual is divided into two sections, the first, a Trainer's Manual, and the second, a Participant's Packet. Each of the two sections of this manual is further divided into sections pertaining to the Onset of TBI, the Re-Entry Process, Using the Team Approach, and the Transition Process. Resource and Glossary sections are also included in the Trainer's Manual section for further reference.

The **Trainer's Manual** is comprised of a set of detailed lecture materials which include specific instructions for presenting the information to a group of participants. The **Participant's Packet** includes reproducible masters of supplemental materials (handouts) that pertain to assessment and management issues. **Master copies of overhead transparencies, to accompany the lecture presentation, are also provided** in the Participant's Packet. Pages that should be produced as overhead transparencies are indicated by an "OH" key at the bottom of the page. Trainers should feel free to copy the entire Participant's Packet (both the handout and transparency masters) for individuals participating in training sessions. We would ask, however, that no portion of the Trainer's Manual be copied. Please ask colleagues interested in having their own copy of the manual to purchase a copy from Sopris West.

This manual was designed to be used in a systematic manner, with one section following another (e.g., Onset preceding Re-Entry). Trainers, however, will find that the materials are flexible and can be easily adapted. This will actually be necessary when presenting information about state guidelines for serving students with TBI, since the editors of this manual used some examples from the state of Utah. Trainers may also want to omit certain portions of the manual or substitute instructional materials for areas that they judge to be less important or feel uncomfortable lecturing about (e.g., using videotapes depicting the mechanism of injury). Trainers should feel free to adapt and supplement this manual in a manner that best suits their needs and those of their audience.

This manual has been used extensively in statewide inservice training across the state of Utah and in graduate and undergraduate training at the University of Utah. For inservice purposes, trainers have found that the materials can be covered in one-day training workshops, but more easily in one and a half to two-day sessions. This allows more time for discussion of the various topics and hands-on experience with the cases that are provided in the manual for discussion. The actual amount of time needed to cover the materials will vary, however, depending upon the background of the trainer and the amount of time allowed for training (e.g., release time for school district personnel to attend the training session).

Manual users have also found that having more than one trainer at the workshop is preferred. Most of the training in Utah has been conducted by two or more trainers with varied specialties (e.g., school psychology and speech and language therapy). Training sessions composed of groups of no more than 40 participants is also recommended. The number of participants becomes increasingly important if trainers wish to use some discussion groups.

To be effective in presenting the materials in the manual, trainers will need to have prior training in TBI. Preferably, trainers will also have experience with children and adolescents who have sustained a TBI. Trainers who have background in this area will find that the manual is a tremendous time saver and organizer for presentations that they wish to make. If manual users have specific questions about training, they are encouraged to phone, FAX, or e-mail Elaine Clark (phone: 801-581-7968; FAX: 801-581-5566; e-mail: Clark@Utah.GSE/edu).

Guidelines for a Successful Presentation

Introduction

These pages contain guidelines and recommendations for planning and delivering a successful presentation of *Utah TBI Training for School Personnel*.

Typical problems

The typical complaints that one can receive about a presentation are that:

- The presenter was disorganized, unprepared, had too much or too little to say.
- The audience couldn't hear the presenter.
- The presenter was dull, took a long time to get to the point, unclear.
- Visuals were bad -- cluttered, unreadable, not big enough for back row, etc.
- There were no handouts or not enough of them to go around.

The following guidelines are intended to help you avoid these pitfalls.

Who is your audience?

The conference will attract educators from a variety of different backgrounds. Most may not know much about Traumatic Brain Injury.

Be sure to define your terms and speak in plain English (not "Educationese") as much as possible. Ask a few questions at the beginning to see who's present, and then *take what you hear into account as you conduct your session*.

Advance planning

A presentation isn't just a matter of standing up in front of a group and lecturing for 45 minutes. It takes planning, preparation, and review of the materials. You can avoid being confused, nervous, or appearing ill-prepared by planning and practicing your presentation *well in advance*.

You need to settle on your objectives and throw out everything that doesn't contribute to them. Focus and clarity are hallmarks of a good presentation. Carefully plan and test the length of your session so that you can stay comfortably within the time limit.

Preparing the presentation

Consider the following areas when you prepare your presentation:

- **Content**: Be sure to outline your major and minor points, and to follow that organization. You need not stick rigidly to a fixed sequence, and may have to adapt as you go along to take questions into account, etc. But know what you're going to say, why, and more or less how you're going to say it.

- **Organization**: Follow the old rule of "first tell what you're going to say (preview), say it, and then tell what you said (summary)." Break what you have to say into main points and sections, be sure the sequence has a logic, and plan transitions for smooth flow. It's helpful to use visuals (overheads) that list main points as a preview and to summarize at key transitions.

Continued on next page

Preparing the presentation (continued)

- **Format**: Most people don't enjoy straight lectures. Vary the format and try to involve the audience in one way or another. Tell people in the beginning whether you'll answer questions as you go, or prefer to hold questions until the end. If possible, ask the audience questions, ask them to share experiences, or otherwise engage their vocal participation to get feedback and keep them on their toes. Simply put yourself in the audience's place as you plan, and keep it interesting -- nothing fancy, just use common sense.

- **Media**: Visuals add an important dimension to your presentation.

- **Handouts**: Prepare Handouts in advance and be familar with the page number sequence.

Before your session

- **Rehearse one more time:** Time an actual run-through of your presentation to be sure you can stay within the session time limits.
- **Organize your materials:** Be sure your transparencies are in order and your handouts are ready. Check to see that any notes you've made in advance are packed with the materials for your presentation, and be sure you can read your notes to yourself if you plan to use them during the presentation.
- **Check out the room**: Be sure you know where it is, what equipment is there, and how the room is set up.
- **Check for any last-minute schedule changes**: On the morning of your presentation, check to see if there have been any changes in room or time.
- **Arrive early**: You may need some time to arrange the room, so arrive a few minutes early and be ready to set up immediately. There should be a person available who knows who to go in case the equipment is not right, etc.
- **Relax and enjoy the conference**: When you've done all the preparation you can do, you deserve to relax. Your audience will be sympathetic, so don't be nervous -- we're all with you, not against you.

Opening comments

At the beginning of your session:

- Introduce yourself (name, brief background).
- Identify the session to be sure people are in the correct room.
- Ask for a show of hands to see who's there (teachers, administrators, related servers, parents, etc.) -- this will help you know how to talk with them.
- State your objectives for the session, what you want people to leave with.
- Describe the format and how you want to proceed (e.g., lecture, group discussion, questions during or after, etc.).

Continued on next page

Guidelines for a Successful Presentation, Continued

Presentation tips

Here are some tips for an effective presentation.

- Face the audience, not the screen, when talking.
- Don't stand between the projector and the screen, and don't block the audience's view of the screen.
- Project your voice -- talk to people in the back row so *everyone* will hear.
- Vary your pitch -- don't use a monotone.
- Don't *read* your presentation to the audience -- use notes, if you can, not a word-for-word script.
- Get to the point quickly and logically.
- Maintain eye contact with the audience. (If you can't, look just over their heads.)
- Point to items on transparencies (or uncover them) as you speak about them.
- Let some humor in -- not contrived jokes, but what comes naturally.
- Remove "fidgetables" -- keys, change, etc. from pockets and your hands.
- Turn off the projector when not in use to prevent distraction by a blank screen or a transparency that is not part of what you're saying at the moment.
- Encourage audience participation in some way.
- Allow time for questions and answers.
- Don't make excuses for your presentation, things you forgot, or visuals that don't look good. Live with it and compensate accordingly.

Answering questions

Repeat the question so everyone can hear it. Then answer it clearly and quickly, in a focused manner. If you don't know the answer, say so. If appropriate, pose the question to the audience to see if anyone knows an answer. If possible, promise to find the answer and get back in touch with the questioner -- then follow-up on that commitment.

Keeping on schedule

Start your session on time. Check your progress about every ten minutes to see how you're doing. Arrange for monitor or a friend to give you signals toward the end (e.g., 10 minutes, 5 minutes, 1 minute remaining). If you're running behind, don't panic -- simply cover the main points and skip some minor ones. Describe where more information can be obtained. Leave 5 to 10 minutes for questions and answers at the end, if possible.

Leaving the room

When your presentation is over:

- Clean up quickly and leave the room so the next presenter has as much time as possible to set up.
- Continue answering questions or accepting praise/criticism outside of the room, away from the doorway.
- Relax -- you've done your best and have given people a lot of important information that they will certainly appreciate.

In their introductory remarks, trainers (or presenters) may wish to use as is. This is a letter from an obviously frustrated parent written on the Bitnet System for the TBI Support Group:

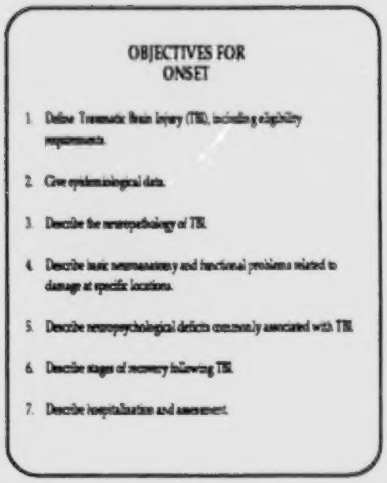
"We are rapidly approaching the beginning of Joshua's school year again which means IEP meetings and dealing with school district personnel. The majority of them do not understand a lot about traumatic brain injury and are certain that if they just assign him LD services, his needs will be met. Last year we went round and round with them over speech services. They assigned a speech therapist who had worked with one child with TBI in her career and tried to convince us that she was adequate. This did not turn out to be true. So we got an independent assessment... so here we go again. I have been avoiding this and can do so no longer. I am interested in the experiences of others and what has worked in addition to rolling up your sleeves in setting up school programs for kids with TBI. Were you able to get across that all these kids do not have identical needs to kids with learning disabilities?"

UNIT 1

ONSET OF TRAUMATIC BRAIN INJURY

UNIT 1

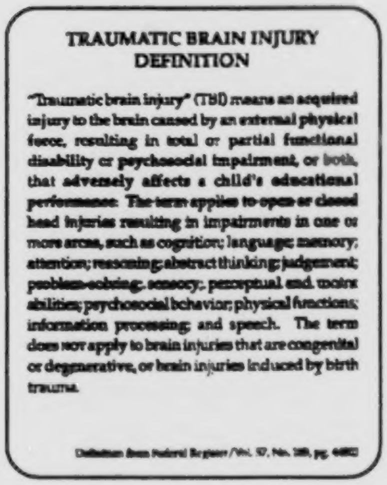
ONSET OF TRAUMATIC BRAIN INJURY



OBJECTIVES FOR ONSET

1. Define Traumatic Brain Injury (TBI), including eligibility requirements.
2. Give epidemiological data.
3. Describe the neuropathology of TBI.
4. Describe basic neuroanatomy and functional problems related to damage at specific locations.
5. Describe neuropsychological deficits commonly associated with TBI.
6. Describe stages of recovery following TBI.
7. Describe hospitalization and assessment.

ONSET
OH-1



TRAUMATIC BRAIN INJURY DEFINITION

"Traumatic brain injury" (TBI) means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgement; problem-solving; sensory, perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Definition from Federal Register / Vol. 57, No. 189, pg. 44802

ONSET
OH-2

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UNIT 1.

THE ONSET OF TRAUMATIC BRAIN INJURY (TBI)

INTRODUCTION

BEGIN by stating the **goals** of this presentation: to describe Traumatic Brain Injury (TBI), and how the brain and behavior are affected by TBI.

ONSET OH-1

STATE the **objectives** of this presentation:

1. Define Traumatic Brain Injury (TBI), including eligibility requirements.
2. Give epidemiological data.
3. Describe the neuropathology of TBI.
4. Describe basic neuroanatomy and functional problems related to damage at specific locations.
5. Describe neuropsychological deficits that are commonly associated with TBI.
6. Describe stages of recovery following TBI.
7. Describe issues regarding hospitalization.

ONSET OH-2

REVIEW the federal definition for TBI.

EMPHASIZE highlighted information. Briefly review various impairments.

STATE the reasons for inclusion of TBI in federal rules and regulations.

- There has been increased awareness on a federal level that schools need to identify children with TBI.
- The inclusion of TBI as a special education category will assist school districts in the appropriate identification, classification, and placement decisions for such children.

UTAH ELIGIBILITY REQUIREMENTS

- Head Trauma
- Infections
- Strokes
- Anoxic Injury
- Tumors
- Toxic Exposure

ONSET
OH-3

INCIDENCE

- For all ages, more than 2 million head injuries occur each year.
- For children and adolescents, annual estimates of head injuries are about 1 million.
- About 165,000 children will be hospitalized, with 16,000-20,000 serious enough to cause lasting effects. Ten percent will not survive.
- Head injury is the leading cause of death and disability in children.
- Almost twice as many males as females.

ONSET
OH-4

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STATE that:

- IDEA's proposed definition of traumatic brain injury raised questions.
- What is meant by "external physical force?"
- What types of occurrences of injury are covered?
- What should be included?
- One key element was that any impairment must "adversely affect educational performance."

ONSET OH-3

EMPHASIZE that the Utah Eligibility Requirements include children with Head Trauma, Infections, Strokes, Anoxic Injury, Tumors, Toxic Exposure.

ALLOW participants about five minutes to review the handouts Utah Eligibility Requirements.

STATE since head injuries are the most common cause of TBI, this will serve as our model to review demographic data as well as physiological mechanisms and consequences.

ONSET OH-4

DESCRIBE the incidence of TBI (from Closed Head Injuries) from Brain Injury Association, Inc. (BIA, Inc.) (formerly the National Head Injury Foundation).

- For all ages, more than 2 million head injuries alone occur each year.
- For children and adolescents, annual estimates of head injuries are about 1 million.
- About 165,000 children will be hospitalized, with 16,000-20,000 serious enough to cause lasting effects. Ten percent will not survive the initial trauma.
- Head injury is the leading cause of death and disability in children.

ONSET
OH-5

MAJOR CAUSES OF HEAD INJURY IN CHILDREN

Infants
- Accidental Dropping
- Physical Abuse

Toddlers
- Falls
- Vehicular Accidents
- Physical Abuse

Preschoolers
- Serious Falls
- Vehicular Accidents
- Physical Abuse

ONSET
OH-6

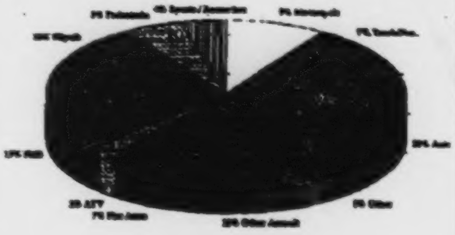
MAJOR CAUSES

Elementary School Children
- Vehicular Accidents
- Bicycle Accidents
- Falls
- Injuries During Recreational Activities

Adolescents
- Vehicular Accidents
- Sports Injuries
- Assault

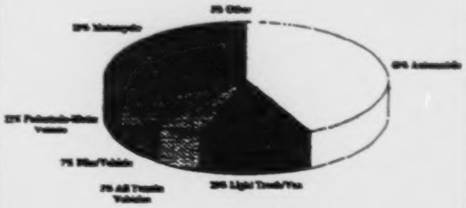
ONSET
OH-7

TRAUMATIC BRAIN INJURIES BY CAUSE



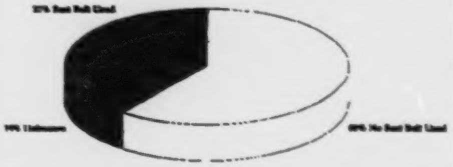
ONSET
OH-8

MOTOR VEHICLE RELATED INJURIES



ONSET
OH-9

SAFETY BELT USAGE IN AUTO AND TRUCK CRASHES



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- Almost twice as many males as females.

ONSET OH-5 & 6

STATE that the causes of head injury vary with the age of the child. The following list summarizes the most common causes by age group.

- Falls - for children under 5 years of age, falls or shell fragments).
- Physical abuse (a large portion [64%] of infant head injuries are caused by abuse).
- Motor vehicle accidents (which are the leading overall cause) - children in the 5 - 14 year age range frequently sustain TBI following pedestrian-motor vehicle or bicycle accidents.
- Recreational activities (such as football, skateboarding, tubing).
- Assault.

ONSET OH-7

SHOW overheads pertaining to Utah data for causes and seat belt use.

- Car and truck crashes were the most frequent cause of TBI (total 26%).
- Followed by falls (18%).
- And assaults (13%).

ONSET OH-8

- More than half of all vehicular accidents involve automobiles and 11% were auto-pedestrian accidents.
- The information on the overhead shows the breakdown by type of vehicle.

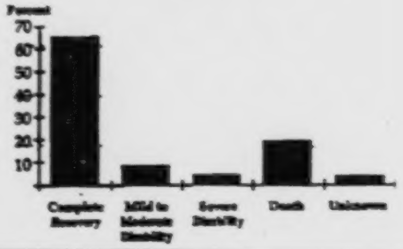
ONSET OH-9

- Despite seatbelt laws, in car and truck crashes, only 21% were known to be wearing safety belts.
- Of those injured in motorcycle or ATV (all terrain vehicles) 81% were not wearing a helmet.

ONSET
OH-9b

SEVERITY OF NEUROLOGICAL IMPAIRMENT

on Discharge from Acute Care (Utah)



ONSET
OH-9c

Severity of Head Injury

Mild:

- Brief or no loss of consciousness
- Shows signs of concussion
  - Nausea and vomiting
  - Headache
  - Fatigue
  - Dizziness
  - Poor Memory
- Post-traumatic amnesia less than 1 hour

Moderate:

- Coma less than 24 hours
- Neurologic signs of brain trauma
  - Skull fracture with contusion
  - Hemorrhage
- Focal findings on CT or EEG
- Post-traumatic amnesia 1-24 hours

Severe:

- Coma more than 24 hours
- Post-traumatic amnesia more than 1 day

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ONSET OH- 9b

BRIEFLY DISCUSS the information regarding severity of neurological impairment on discharge from acute care.

STATE that the data were abstracted from 1,978 cases, or 8% of head injury cases in Utah in 1990 (about 25,000 total).

ONSET OH-9c

REVIEW criterion for mild, moderate, and severe.

EMPHASIZE that:

- Many injuries not classified as severe may also cause permanent effects on a child's functioning.
- Even those that are considered "completely recovered" may have problems later on.

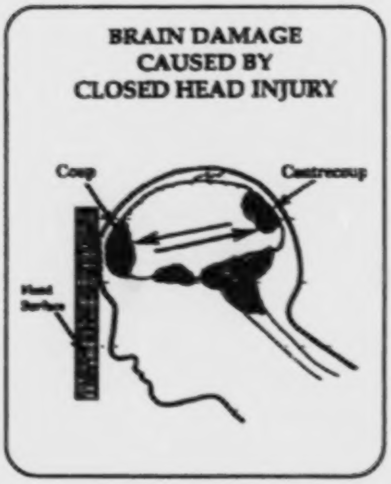
STATE the definition of **OPEN HEAD INJURY:** a head injury which occurs when the skull is penetrated by a sharp instrument (such as a knife) or an explosive missile (such as a bullet or shell fragments).

DESCRIBE the pathology associated with open head injury.

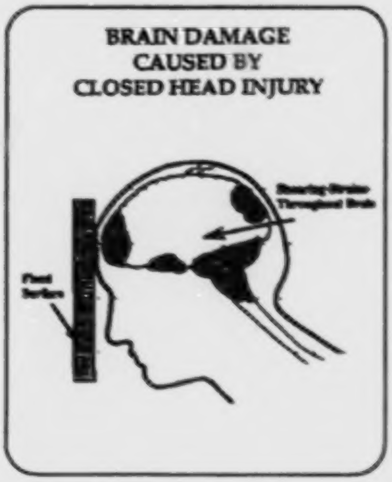
- In penetrating head injuries, tissue damage will be found at the point of penetration and surrounding the path of the intruding object.

EMPHASIZE that gunshot wounds account for the majority of open head injuries.

STATE that for TBI, the most common form of brain damage is caused by **closed head injury.**


BRAIN DAMAGE
CAUSED BY
CLOSED HEAD INJURY
Coup
Contrecoup

ONSET
OH-10


BRAIN DAMAGE
CAUSED BY
CLOSED HEAD INJURY

ONSET
OH-11

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STATE the definition of a **CLOSED HEAD INJURY**: a type of traumatic brain injury in which the primary cause of damage is a blunt impact or blow to the head without penetrating the skull.

DEFINE the various terms related to closed head injury.

- **Acceleration injuries** can result from a blow from a blunt object. The skull is accelerated from the force of a moving object (e.g., when a child is hit with an object, or receives a violent shaking).
- **Deceleration injuries** occur when an immovable or stationary object exerts force on a child's moving head.

NEUROPATHOLOGY OF TBI

ONSET OH-10

DESCRIBE the neuropathology of TBI.

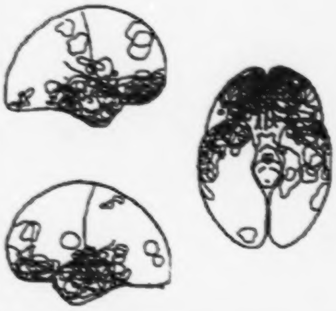
- The **coup** injury is damage at the original point of impact resulting from the inward compression of the skull.
- The **contrecoup** injury is damage which occurs when the brain bounces off the skull on the opposite side from the initial impact, causing adjacent outbending.

ONSET OH-11

REFER to OH and state:

- **Forces** on the brain which cause the brain to move and rotate as the skull puts a strain on nerve fibers and blood vessels which can cause sheering.
- This can also cause widespread damage to axons in the white matter of the brain and in the brain stem which in some cases leads to death.

TYPICAL LOCATIONS OF CONTUSIONS



ONSET
OH-12a

OTHER EFFECTS OF HEAD TRAUMA

- Edema is a term for brain swelling resulting from the increase and collection of fluid around the damaged brain tissue.
- Increased intracranial pressure is a build-up of pressure inside the skull.
- Hemorrhage occurs as blood flows within the skull. A clotting or mass of blood is called a hematoma.
- Infarction is death of tissue due to reduced blood flow.
- Infection is more common in patients who have received a skull fracture

ONSET
OH-12b

ONSET
OH-13a

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ONSET OH-12a

- As the brain is moved against the skull, it can also be bruised (contusions).

EMPHASIZE that contusions are often found in the frontal temporal regions, regardless of the site of impact. These are areas of bony projections and irregularities in the skull with a greater degree of brain-bone interface.

ONSET OH-12b

DESCRIBE other effects of head trauma.

- **Edema** is a term for brain swelling resulting from the increase and collection of fluid around the damaged brain tissue.
- **Increased intracranial pressure** is a build-up of pressure inside the skull.
- **Hemorrhage** occurs as blood flows within the skull. A clotting or mass of blood is called a hematoma.
- **Infarction** is death of tissue due to reduced blood flow.
- **Infection** is more common in patients who have received a skull fracture.

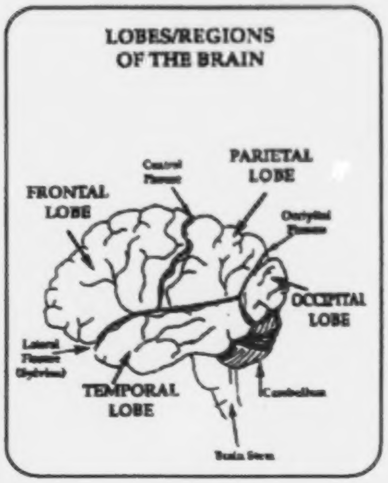
NEUROANATOMY

ONSET OH-13a

DESCRIBE the cerebral cortex, the largest area of the brain.

- The outer layer of the cortex is referred to as gray matter, the inner cells as white matter.
- The cortex can be divided into two halves called the right and left hemisphere.
- The right hemisphere controls the left side of the body, and the left hemisphere controls the right side of the body.
- Different functions are operated by different sides of the brain.

ONSET
OH-13b



LOBES/REGIONS
OF THE BRAIN

FRONTAL LOBE
Central Fissure
PARIETAL LOBE
Occipital Fissure
OCCIPITAL LOBE
Lateral Fissure (Sylvian)
TEMPORAL LOBE
Cerebellum
Brain Stem

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- Generally, the left hemisphere is associated with language functions, and the right with non-verbal skills such as visual-spatial ability.

EMPHASIZE STRONGLY that:

- The connections between neuroanatomical sites and neurobehavioral components are never one to one.
- Rather, multiple sites can contribute to one behavior and one site can contribute to multiple behaviors.
- Certain functions, however, have been linked to each lobe or region of the brain.
- When injury occurs to a particular lobe, certain deficits are commonly associated with those functions. This, however, can vary from one individual to the next.

ONSET OH-13b

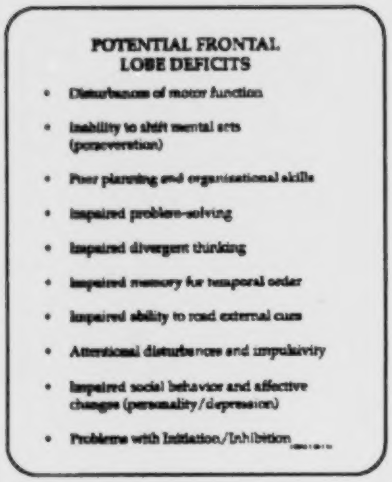
REFER participants to the lobes of the cerebral hemisphere handout and **INDICATE and NAME** the four lobes in each hemisphere organized by indentations or fissures.

- Frontal
- Temporal
- Parietal
- Occipital

STATE that the **frontal lobes** occupy the front portion of the brain behind the forehead (33% of the total cortex). Frontal lobes are the latest to develop in the maturing individual.

EMPHASIZE again that the frontal lobes are often the site of direct impact and are susceptible to contusions.

ONSET
OH-14



POTENTIAL FRONTAL LOBE DEFICITS

- Disturbances of motor function
- Inability to shift mental sets (perseveration)
- Poor planning and organizational skills
- Impaired problem-solving
- Impaired divergent thinking
- Impaired memory for temporal order
- Impaired ability to read external cues
- Attentional disturbances and impulsivity
- Impaired social behavior and affective changes (personality/depression)
- Problems with Initiation/Inhibition

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DESCRIBE the frontal lobe functions.

- The major role of the frontal lobes is regulation of behavior.
- Control of voluntary muscle movement (speech, writing).
- **Executive functions**:
  planning, organization, problem solving, divergent thinking, temporal memory, and shifting responses.

EMPHASIZE that since frontal lobes have neural connections with other regions of the central nervous system, damage to the lobe can produce a wide variety of symptoms.

ONSET OH-14

BRIEFLY DESCRIBE the types of deficits sometimes identified with frontal lobe injuries:

- Disturbances of motor function.
- Inability to shift mental sets (perseveration).
- Poor planning and organizational skills.
- Impaired problem solving.
- Impaired divergent thinking.
- Impaired memory for temporal order.
- Impaired ability to use external cues.
- Attentional disturbances.
- Impaired social behavior (personality changes).
- Problems with initiation and inhibition.

STATE that the **occipital lobes** are located at the back of the brain. They are not as likely to be the site of the coup injury but may be injured as a result of the contrecoup injury.

DESCRIBE the occipital lobe functions.

- Contain the primary visual area.
- Contain neural pathways connecting the

POTENTIAL OCCIPITAL LOBE DEFICITS

- Blind spots in the visual field
- Visual agnosia or Visual distortions
- Cortical blindness

ONSET
OH-15

POTENTIAL PARIETAL LOBE DEFICITS

- Inability to comprehend spoken language
- Writing Disabilities
- Distortions of body image
- Contralateral neglect — neglect of
  - visual
  - auditory
  - somatosensory stimulation
- Inability to recognize musical tunes
- Loss of ability to recognize faces

ONSET
OH-16

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occipital lobe to other areas of the brain involved in interpreting vision and written words.

ONSET OH-15

- The types of deficits associated with lesions involving the occipital lobes.
  - ° Lesions to the primary visual cortex may result in discrete blind spots in the visual field.
  - ° Lesions involving the visual association areas may result in visual agnosia or visual distortions.
  - ° Cortical blindness occurs when an individual loses the ability to distinguish forms or patterns, but remains responsive to light and dark.

STATE that the **parietal lobes** lie behind the central sulcus and include the upper middle lobe of each side of the brain.

DESCRIBE parietal lobe functions.

- Receive sensation and are involved in understanding sensations such as body part awareness, pain, touch, and temperature.
- Involved in receptive language.

ONSET OH-16

- Types of deficits associated with lesions involving the left and right parietal lobes.
  - ° Wernicke's Syndrome (inability to comprehend spoken language) is associated with damage to the left parietal lobe.
  - ° Writing disabilities (agraphia-inability to write) is also associated with the left parietal lobe damage.
  - ° Distortions of body image.
  - ° Contralateral neglect may occur with right parietal lobe damage. Contralateral neglect is a neglect of visual, auditory, and

POTENTIAL TEMPORAL LOBE DEFICITS

- Poor long-term memory.
- Disturbance of language comprehension.
- Disturbance of auditory and olfactory perception.
- Disturbance of visual perception.
- Impaired organization
- Personality changes
- Changes in sexual behavior

ONSET
OH-17

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  - somatosensory stimulation on the left side of the body.
  - Inability to recognize musical tunes.
  - Loss of ability to recognize faces.

STATE that the **temporal lobes** include the lower middle part of each side of the brain and are located along the sides of each hemisphere.

EMPHASIZE that in TBI, lesions often occur to the temporal lobes due to the skull irregularities in this region.

DESCRIBE the temporal lobe functions.

- Contain the primary sensory regions for hearing and possibly smell.
- Sounds are interpreted.
- Temporal lobes are also involved in attention and memory processes.

ONSET OH-17

BRIEFLY DESCRIBE the types of deficits that may be associated with temporal lobe damage.

- Poor long-term memory.
- Disturbance of language comprehension.
- Disturbance of auditory and olfactory perception.
- Disturbance of visual perception.
- Impaired organization.
- Personality changes.
- Changes in sexual behavior.

STATE that the **brain stem** is located beneath the cerebral cortex in front of the cerebellum. It extends upward from the spinal cord. Three regions compose the brain stem: the medulla, pons, and midbrain.

ONSET
OH-18

POTENTIAL BRAIN STEM DEFICITS

- Altered Consciousness
- Difficulty Breathing
- Vision Problems
- Hearing Problems
- Changes in Sense of Smell

EMPHASIZE that it can be easily damaged in TBI because of its position near bony areas.

DESCRIBE the functions of the brain stem.

- Connects the cortex to the spinal cord.
- Controls all information moving back and forth from the brain to the body.
- Controls vital functions such as consciousness and breathing.
- Cranial nerves that control vision, smell, and hearing also originate in the brain stem.

ONSET OH-18

BRIEFLY DESCRIBE the types of deficits associated with the brain stem.

- Altered Consciousness
- Difficulty Breathing
- Vision Problems
- Hearing Problems
- Changes in Sense of Smell

STATE that it may be helpful to emphasize nature of brain on brain stem (apple/pencil).

STATE that the **cerebellum** is specialized for motor coordination but connects with the brain stem and contains projections to the spinal cord and frontal/temporal region of the brain.

DESCRIBE the functions of the cerebellum.

- Maintaining equilibrium and muscle tone.
- The cerebellum and its relation to other parts of the motor system participate in controlling whole body movements and also independent movement of limbs and fingers.

POTENTIAL CEREBELLAR DEFICITS

- Disruptions in posture and walking
- Weakness
- Tendency to fatigue
- Deficits in the control of the extremities
- Eye movement problems (nystagmus)
- Deficits assessing distances

ONSET
OH-19

OTHER NEUROANATOMICAL SITES

Limbic System

Motor Strip

Sensory Strip

ONSET
OH-20

- The fact it connects to the pre-frontal cortex may also explain why it has been said to be involved in disorders such as autism and schizophrenia.

ONSET OH-19

BRIEFLY DESCRIBE the types of deficits associated with damage to the cerebellum.

- Disruptions in upright posture and walking.
- Weakness and tendency to fatigue.
- Deficits in the control of the extremities.
- Eye movement problems (Nystagmus).
- Deficits assessing distances.

ONSET OH-20

DESCRIBE the function(s) and deficits associated with each of the following:

- The **limbic system** (along with the hypothalamus) controls emotional functioning. It is also involved with hunger, thirst, and biological rhythms.
- The **motor strip** or motor cortex is located in the frontal lobes. Commands from this area are sent to specific muscles involved in motor acts such as speech. Damage to the motor strip can impair fine motor functioning or speech functioning.
- The **sensory strip** or primary somatosensory cortex is part of the parietal lobe. Damage to this area may disrupt the sensory systems, resulting in sensory impairments.

NEUROPSYCHOLOGICAL FUNCTIONING

STATE that the immediate period following a head injury may include a variety of particular physical symptoms. These symptoms are sometimes referred to as "post-concussional" symptoms.

POST-CONCUSSIONAL SYMPTOMS

Headache
Fatigue
Dizziness
Sleep Disturbance
Memory

ONSET
OH-21

MOTOR SEQUENCE FOLLOWING TBI

- **Hemiplegia:** Motor paralysis of one side of body.
- **Hemiparesis:** Motor weakness of one side of body
- **Ataxia:** Loss of ability to coordinate smooth movements or steady gait
- **Hypotonicity:** Low muscle tone of trunk or limbs.
- **Rigidity:** Resistance to movement in any range
- **Spasticity:** Inappropriate sustained contraction of muscles.
- **Tremors:** Involuntary movements from contractions of opposing muscles.

ONSET
OH-22

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ONSET OH-21

LIST the most frequently reported symptoms.

- Headache
- Fatigue
- Dizziness
- Sleep disturbance
- Memory

STATE that other problems include: depression, anxiety, appetite disturbance, thinking, concentration, blurred vision, coordination, noise sensitivity, patience, and vertigo.

EMPHASIZE that 50-80 percent of patients complain of one or more of these symptoms at some time following their injury.

STATE that TBI can result in a range of motor deficits, depending upon the site of the lesion and the severity of the injury.

ONSET OH-22

DEFINE the types of motor deficits following TBI.

- **Hemiplegia**: motor paralysis of one side of the body.
- **Hemiparesis**: motor weakness of one side of the body.
- **Ataxia**: the loss of ability to coordinate smooth movements or steady gait.
- **Hypotonicity**: low muscle tone of the trunk or limbs.
- **Rigidity**: the resistance to movement.
- **Spasticity**: an inappropriate sustained contraction of muscles.
- **Tremors**: involuntary movements from contractions of opposing muscles.

EMPHASIZE that some motor deficits may be temporary, however, many TBI children are

ONSET
OH-23

OTHER MEDICAL PROBLEMS

- Seizures
- Visual Impairment
- Hearing Difficulties
- Endocrine Disturbances
- Precocious Puberty
- Diabetes Incipitus

discharged from the hospital and return to school before motor skills are fully recovered.

STATE that there are often other medical problems after injury.

ONSET OH-23

BRIEFLY DESCRIBE the facts about seizures associated with TBI.

- Epilepsy or **seizures** are more common following a penetrating injury. However, about 5 percent of all patients hospitalized for a closed head injury are affected by seizures.
- Seizures are most common in children with severe head injuries.
- Seizures are most likely to occur during the first week following the injury. This is called **early onset epilepsy**, and is sometimes related to seizures later in life
- **Late onset epilepsy** is when the seizures begin after the first week. The incidence of late epilepsy is also 5 percent.
- Late epilepsy is also related to skull fracture and an intracranial hematoma.

STATE the following:

- Head injuries can also produce visual impairments. Lesions to the primary visual areas or pathways can result in impairments such as visual field deficits or double vision.
- Hearing problems such as ringing in the ears.
- Endocrine disturbance after head injury is also a concern in terms of problems like precocious puberty and diabetes insipidus.
- Precocious puberty is when children younger than nine experience a rapid progression of secondary sexual development (early breast development) after the injury. However,

ONSET
OH-24

COGNITIVE SEQUELAE

- Attentional Difficulties
- Memory Problems
- Intelligence
- Achievement
- Reasoning and Problem Solving
- Organizational Skills
- Language Deficits
- Processing of Information
- Visual-Motor and Visual-Perceptual Skills

precocious puberty is relatively uncommon following head injury.

COGNITIVE PROBLEMS

STATE that cognitive deficits following TBI will vary from one individual to another.

ONSET OH-24

PRESENT some of the cognitive deficits resulting from moderate to severe head injuries.

DESCRIBE :

- Attentional difficulties:
  - Attentional difficulties include distractibility, problems in focusing, and concentration.
  - Deficits in attention may underlie other cognitive impairments and behavioral problems.
  - Children with problems in attention before the injury may likely display increased disturbances after the injury.
- Memory problems following TBI:
  - **Memory**: the ability to learn new information and to retrieve information that was previously learned.
  - **Memory disturbance**: a characteristic feature of TBI. Majority of TBI patients exhibit memory deficits.
  - **Short-term ("working") memory**: limited amount of information consciously attended to (one minute or less).
  - **Long-term memory:** information memorized, stored, and remembered for longer periods (over one minute).
  - **Retrograde amnesia**: memory loss for

events occurring immediately before the injury.

- **Post Traumatic Amnesia (PTA)**: the period of memory disturbance following onset of injury.
  - PTA includes the period of coma and the period following the coma until the person's memory becomes reliable and consistent.

BRIEFLY DESCRIBE the following memory impairments following coma.

- Inability to remember events experienced immediately before the injury.
- Inability to retain information about ongoing events.

EMPHASIZE that many patients continue to experience trouble remembering things after the return of normal awareness. Severe TBI produces more persistent and pronounced memory impairment which may interfere with school progress.

- Problems with intelligence following TBI:
  - Several studies have shown declines in intelligence test scores following TBI.
  - Children with head injuries tend to show greater deficits in nonverbal tasks than verbal ones. These are often the time/speed tasks.
  - Well-learned knowledge may be recovered more quickly, whereas ability to learn new skills and problem solving remain impaired.
- School achievement problems following TBI.
  - Changes in academic abilities are common.

  - Some studies have found arithmetic skills to be particularly vulnerable.
  - Reading ability may also be affected.
  - Attentional problems, memory impairments, and decline in overall intelligence can lead to secondary deficits in school performance.

EMPHASIZE that some of the achievement problems are not observed right away. It may take a year or two for the problem to become apparent.

- Difficulties with reasoning and problem solving following TBI.
  - Children who sustain moderate or severe head injury may have difficulty with tasks requiring abstract thinking or problem solving.
- Problems with organizational skills following TBI.
  - TBI children sometimes have inadequate organizational skills.
  - They may have difficulty with sequential relationships or spatial organization.
  - It may be difficult for them to break tasks into component parts.
- Language deficits associated with TBI.
  - The severity of language deficits is associated with the severity of the injury as well as the degree of left hemisphere damage.
  - Lesions to language regions of the left hemisphere may lead to language impairments.
  - Aphasia: a language disorder characterized by loss of speech, writing, or comprehension of language.
  - Word-finding or word-naming ability is

BEHAVIORAL SEQUELAE

- Impulsivity
- Aggression
- Emotional Lability
- Agitation
- Disinhibition
- Poor Social Functioning
- Self-Esteem
- Motivation
- Awareness of Deficits
- Anger
- Depression

ONSET
OH-25

often impaired.
  - Global aphasia results from large lesions in the left hemisphere.
- TBI children may also have difficulty processing large amounts of information. They have a tendency to overload quickly.
- Visual-motor and visual-perceptual skills commonly exhibited in TBI children.
  - Slow visual motor dexterity.
  - Configural distortions.
  - Problems with directionality.
  - Poor attention to detail.
  - Disabilities in facial discrimination.

EMPHASIZE that because of these cognitive problems, a large number of TBI children require special classroom placement or additional services.

BEHAVIORAL PROBLEMS

STATE that changes in behavior and personality are problems that many survivors face after TBI. Many of these psychiatric disorders continue to be persistent problems for years following the injury.

EMPHASIZE that a child with pre-injury behavior problems is more likely to exhibit such problems following the injury.

STATE the majority of children with head injuries develop at least one behavior symptom.

ONSET OH-25

DESCRIBE behavioral complications associated with TBI.

- **Impulsivity:** when a child has difficulty controlling impulses. Impulsive children are

ONSET
OH-25
continued

BEHAVIORAL SEQUELAE

- Impulsivity
- Aggression
- Emotional Lability
- Agitation
- Disinhibition
- Poor Social Functioning
- Self-Esteem
- Motivation
- Awareness of Deficits
- Anger
- Depression

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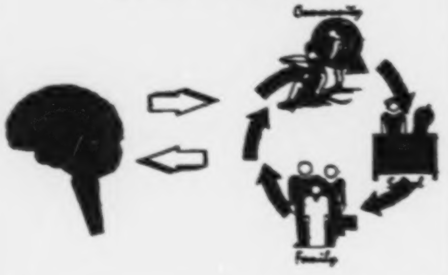
impatient and fail to think before acting.

- **Aggression:** when a child exhibits increased aggression and becomes easily angered. Poor impulse control and lack of inhibition may result from neurological damage.
- **Emotional lability:** or mood swings which may occur as the body attempts to reestablish balance. Mood changes may be quite rapid and appear unprecipitated by environmental factors.
- **Agitation:** children may have a change in activity level. Some may become agitated while others experience lethargy.
- **Disinhibition:** a pattern of marked socially disinhibited behavior. Such behavior may include asking embarrassing questions, making personal remarks, undressing, and outspokenness.
- **Poor Social Functioning:** problems in social functioning such as reading social cue or isolation are commonplace after head injury.
- **Self-esteem:** awareness of changes in ability may affect self-esteem; expectations and sense of self are changed by TBI.
- **Motivation:** displaying a lack of motivation and loss of initiative in spite of good intellectual and language abilities.
- **Awareness of deficits:** some children do not recognize there are changes in physical, emotional, and cognitive abilities following the injury. They may deny they have any impairments. This may reflect an inability to realistically judge their own capabilities and the severity of their deficits.
- **Anger:** frustration associated with impairments may lead to increased anger.
- **Depression:** as children become aware of the

ONSET
OH-26a

RECIPROCAL INTERACTION


Community
School
Family

ONSET
OH-26b

FACTORS IN RECOVERY

- Age
- Site of injury
- Degree of damage (and cause)
- Premorbid characteristics
- Family support

severity of their injury and recognize changes, they may suffer periods of depression.

COURSE OF RECOVERY

ONSET OH-26a

EMPHASIZE that the brain does not operate in a vacuum, it operates in an environmental context that includes family, community, and school.

- This is a bidirectional system where the brain and these contexts are fused into a continuous reciprocal interaction that is important for developing and maintaining skills.
- This is a critical point if one is to believe that interventions will make a difference for the brain-injured child.

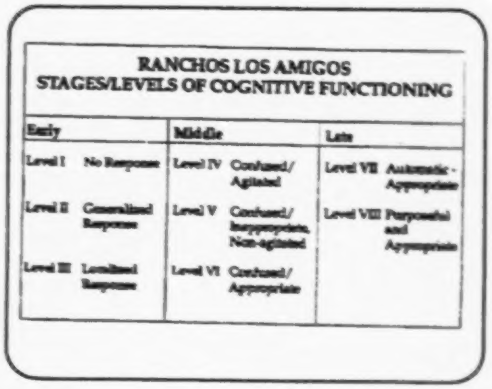
ONSET OH-26b

STATE that because head injuries vary in severity, outcome and recovery are associated with a number of factors:

- Age
- Site of injury
- Degree of damage (and cause)
- Premorbid characteristics
- Family support

EMPHASIZE that despite the fact younger children seem to have a greater chance of survival than adults, there is evidence which suggests that children may exhibit more severe neuropsychological deficits. However, this may depend on when the injury occurs and what area of the brain is affected. Each age group has particular vulnerabilities depending on the state of maturation.

EMPHASIZE: Although the immature brain may show greater resilience to focal lesion effects,



ONSET
OH-27

RANCHOS LOS AMIGOS
STAGES/LEVELS OF COGNITIVE FUNCTIONING

Early		Middle		Late	
Level I	No Response	Level IV	Confused/ Agitated	Level VII	Automatic - Appropriate
Level II	Generalized Response	Level V	Confused/ Inappropriate, Non-agitated	Level VIII	Purposeful and Appropriate
Level III	Localized Response	Level VI	Confused/ Appropriate		

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it may be more susceptible to diffuse effects. Because a child is ever changing, it is important to evaluate the significance of brain injury in regard to a variety of developmental stages and acquisition of new skills. TBI may cause immediate loss of function, diminished function (regression to earlier level) or deficits in future skill development.

STRESS that while much of the recovery following TBI takes place in the first six months to a year after the injury, recovery may continue for years but at a slower rate. Accurate predictions of long-term outcome are, therefore, more likely when made at least a year or two post-injury.

ONSET OH-27

- Stages of recovery described in the Rancho Los Amigos' Level of Cognitive Functioning outline the recovery process following a sever injury.
- Progress may be through all stages at different rates. Some individuals can remain at "early" or "middle" stages indefinitely. Some may never have been at the early stage such as coma, and others may not go through all stages.
- During early stages, sensory and sensorimotor stimulation may promote adaptive responses to environmental stimuli and facilitate arousal.
- In the middle stage, individuals need highly structured environments and systematic retraining of cognitive skills. Gradually, more complex tasks are added and prompts and cues are decreased.
- During the late stage, interventions may involve development of independence and adaptation to normal environmental situations. Some

LABORATORY PROCEDURES

- Computerized Tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Single-Photon Emission Computed Tomography (SPECT)
- Positron Emission Tomography (PET)
- Electoencephalography (EEG)

ONSET
OH-28

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adjustment may be required such as reduced school work, shorter school days, use of memory devices, and compensatory training.

- The school system may be involved at any of these stages, even coma.

HOSPITAL ISSUES AND ASSESSMENT

BRIEFLY MENTION that in the hospital, various professionals are involved in the evaluation and treatment of a TBI child.

EMPHASIZE that when a TBI child returns to school, there is a critical need for liaison between the hospital and the school to ensure that these children receive the proper services to facilitate their education.

STATE that agencies involved in acute care and treatment of TBI children such as hospitals and rehabilitation centers, play an important role in the child's adjustment to home and school.

EMPHASIZE that communication between personnel in such agencies and educational personnel is necessary. It is often helpful to assign a "case manager" to assume responsibility for the coordination of data and communication between agencies.

NOTE that it may be helpful to familarize yourself with some terms that may be a part of your communication with hospital staff or in written hospital reports.

NOTE TO PRESENTER: Do not spend a lot of time on this section.

STATE:

- The Glasgow Coma Scale (GCS) is used to measure impaired consciousness. The GCS involves assessing motor responses, verbal responses, and eye opening during the first 24 hours following the injury. This is assessed by paramedics and Emergency Room staff.

ONSET OH-28

DESCRIBE the laboratory procedures designed to assist in assessing the nature and extent of brain damage.

- Standard practice is to perform **Computerized Tomography (CT)** for any individual with a significant brain injury and it is usually the first imaging study done on hospital admission.
  - ° CT is a noninvasive imaging technique using a narrow beam of X-rays.
  - ° Day of injury CTs often fail to demonstrate the extent of brain injury (e.g., brain swellings may initially reduce ventricle size).
  - ° CTs six weeks post-injury are better able to show tissue loss or atrophy.

- **Magnetic Resonance Imaging (MRI)** is another imaging procedure commonly used to assess brain damage.
  - ° MRI is a more recent technique and is more costly than CT. MRIs produce images similar to CT scans but provide finer detail.
  - ° MRIs take longer so are less often used day of injury.
  - ° MRI images are obtained from the resonance of hydrogen atoms when placed in a magnetic field.

- **Functional MRI (FMRI)** is a new non-invasive means to map brain function.
  - Cerebral blood flow and volume are measure, as is arterial oxygenation.
  - Research is just in the beginning phases.

- **Single-Photon Emission Computed Tomography (SPECT)** is another scanning technique.
  - In SPECT, the patient is given a radio-actively labeled substance and the single photons that are emitted are recorded by a detector.

- **Positron Emission Tomography (PET)** is also a method which provides anatomical information following an intravenous injection of a radioactive substance.
  - The PET scan measures metabolic activity of brain regions, but is rarely done because of expense and unavailability (needs a cyclotron to operate).

- **Electoencephalography (EEG):** a technique where electrodes are placed on specific areas of the skull and used to localize the source of abnormal brain activity.

UNIT 2

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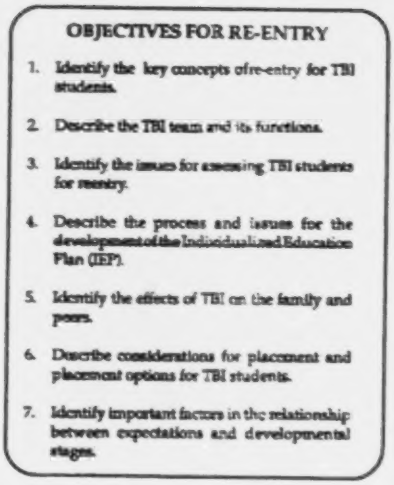
THE RE-ENTRY PROCESS

UNIT 2

THE RE-ENTRY PROCESS

RE-ENTRY
OH-1



OBJECTIVES FOR RE-ENTRY

1. Identify the key concepts ofre-entry for TBI students.
2. Describe the TBI team and its functions.
3. Identify the issues for assessing TBI students for reentry.
4. Describe the process and issues for the development of the Individualized Education Plan (IEP).
5. Identify the effects of TBI on the family and peers.
6. Describe considerations for placement and placement options for TBI students.
7. Identify important factors in the relationship between expectations and developmental stages.

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UNIT 2

RE-ENTRY

INTRODUCTION

BEGIN by stating the goal of this section: to describe the process of reintegrating the TBI student into the school environment.

EMPHASIZE that planning for discharge from the hospital and the return to the school needs to begin on the day of admission.

RE-ENTRY OH-1

STATE the objectives of this section:

1. Identify the key concepts of re-entry for TBI students.
2. Describe the TBI team and its function.
3. Identify the issues for assessing TBI students for re-entry.
4. Describe the process and issues for the development of the Individualized Education Plan (IEP).
5. Identify the effects of TBI on the family and peers.
6. Describe considerations for placement and placement options for TBI students.
7. Identify important factors in the relationship between expectations and developmental stages.

RE-ENTRY
OH-2

KEY CONCEPTS FOR RE-ENTRY

- Schools are the key service providers.
- Initiate services early.
- Services are ongoing and must meet the changing needs of the student.
- Personnel must monitor, document, and evaluate.
- Flexibility.
- Rehabilitation Act, Section 504.
- Individual's with Disabilities Educational Act (IDEA).

RE-ENTRY
OH-3

MAJOR LEGISLATIVE PRINCIPLES
Of the Federal Right to Education

- Zero Reject
- Least Restrictive Environment
- Appropriateness
- Due Process

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RE-ENTRY OH-2

STATE the key concepts of TBI in re-entry:

- Schools are the key service providers. Once a student has left a treatment facility, the school is the primary service provider.
- Initiate services early. "An ounce of prevention in the early weeks and months after the return to school may be worth a pound of expensive services later." (Ylvisaker, 1992)
- Services are ongoing and must meet the changing needs of the student.
- School personnel working with TBI students must monitor, document, and evaluate progress.
- Flexibility is required. Placement, intervention, and teaching techniques need to use gradual and systematic steps, addressing cognitive issues and compensatory skills.
- Some TBI students may need only selected services as stated in Section 504 of the Rehabilitation Act.
- Other TBI students may require services under the Individuals with Disabilities Educational Act (IDEA).

RE-ENTRY OH-3

REVIEW four major legislative principles of the federal right to education that also apply to students who have been classified with TBI:

- **Zero Reject**: access to free public education must be provided for all children and youth regardless of degree of exceptional or fiscal impact on the school system.

RE-ENTRY
OH-4

SCHOOL RE-ENTRY TEAM

- Case Manager
- Parent (s)
- Student
- Classroom and/or Special Education Teacher (s)
- Counselor
- School Psychologist
- Administrator
- Medical Personnel (initially)
- Therapists
- Others as needed

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- **Least Restrictive Environment**: education should be provided in the least restrictive, most normal setting possible that is consistent with the learning needs of the student.
- **Appropriateness**: education must be based on an individualized program that is determined by the team to be appropriate to the needs of the child.
- **Due Process**: opportunity must be made available for a notice or a hearing appeal with respect to placement or other changes in educational programs.

REFER to your state guidelines. You may want to ask participants what they know about their state rules and regulations.

EMPHASIZE that these Guidelines describe the process for determining eligibility. An example of the Guidelines--a physician must make the diagnosis.

THE SCHOOL RE-ENTRY TEAM

STATE: "Keep in mind that you, as educators, are not alone when working with TBI students."

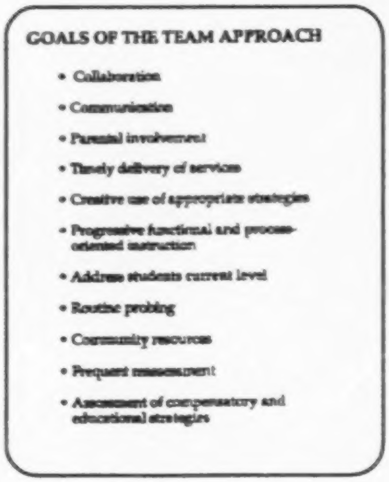
RE-ENTRY OH-4

BRIEFLY REVIEW the various possible members of the TBI team.

NOTE: School districts are encouraged to have a Special Education Crisis Team or Traumatic Brain Injury Team, or both, in each school district.

- **Case Manager**: someone who sees the student daily and is familiar with the effects of the acquired brain injury. This person must also see that the integration of clinical and school

RE-ENTRY
OH-5



GOALS OF THE TEAM APPROACH

- Collaboration
- Communication
- Parental involvement
- Timely delivery of services
- Creative use of appropriate strategies
- Progressive functional and process-oriented instruction
- Address students current level
- Routine probing
- Community resources
- Frequent measurement
- Assessment of compensatory and educational strategies

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services takes place. (More often than not, this person is assigned by an administrator).

- **Parent(s)**: a most valuable source of information pertinent to providing appropriate interventions and services. Keep the parents involved to empower them and to assist in resolving the psychological processes associated with their own issues around the TBI student and incident.
- **Student:** since each person with TBI has unique deficits, the student is probably the most valuable resource when trying to determine appropriate interventions.
- **Other team members:**
  - Include the classroom teacher(s), counselor, school administrator, and (initially), appropriate medical personnel.
  - Based on the individual's needs, a speech/language pathologist, school psychiatrist, occupational therapist, physical therapist, adaptive P.E. teacher, special education teachers, the school nurse, and vocational rehabilitation counselor may be a part of the team.

RE-ENTRY OH-5

DISCUSS the goals of the team approach.

- The collaboration of a well informed transdisciplinary team.
- Communication among team members and family (via team meetings, daily memos, student progress notes, etc.).
- Parental involvement and active participation.
- The timely delivery of services aimed at restoring/retraining lost or disorganized functions.

- Creative use of a variety of education, behavioral, and rehabilitative strategies.
- Emphasis should be on progressive functional and process-oriented instruction versus unproductive and unnecessarily redundant isolated skill practice.
- Consideration of the student's **current** level of functioning and ability profile. Remember, this may change quite rapidly.
- Routine probing to "test" for the resolution of functions and preserved skills.
- Maximization of community resources (for example, Health Services, the Brain Injury Association of your state, and local interagency councils).
- Frequent reassessment of student progress and revitalization of instructional goals, methods, and program components.
- The team needs ongoing assessments of compensatory strategies (discussed in the unit on *Team Approach*).

STRESS that it may be necessary for key personnel to get further training in the area of TBI. This could be in the form of inservice workshops, or advanced training courses. Regular classroom teachers will likely need inservice on the learning style of the TBI student and the compensatory strategies that can be developed.

RECOMMEND that an inservice be provided for the school staff on TBI. Include all staff who will be in contact with the student: teachers, support staff, clerical staff, bus drivers, and plant operations staff.

RE-ENTRY
OH-6

ELEMENTS IN THE ASSESSMENT PROCESS

- Review prior school records
- Obtain reports from parents
- Review reports from treatment facility/therapists
- Informally observe/interview student

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STATE that if a TBI team exists on the district level, regularly scheduled meetings will be valuable in exchanging ideas and suggestions for any student being served in the district.

THE ASSESSMENT PROCESS

RE-ENTRY OH-6

DESCRIBE elements to consider in the assessment process.

- **Review prior school records.** Before re-entry into the classroom, it is important to know the student's prior functioning (academic, social, behavioral functioning).
- **Obtain reports from the parents** regarding prior functioning versus current functioning levels. Frequently a student with TBI will have displayed problems with behavior or learning prior to the injury. These deficits may be more pronounced afterwards.
- **Review reports from treatment facility or therapists** regarding current cognitive functioning (progress notes, neuropsychological reports) and current medical status (i.e., medications, therapies).
    - Information you get from any facility may vary.
    - Check dates of assessment: the information may already be out of date.
- Gain information through **informal observation or interview**.

RE-ENTRY OH-7

EXPLAIN why it is important for the Re-entry

RE-ENTRY
OH-7

INFORMATION NEEDED BY RE-ENTRY TEAM

- Medical status
- Medical management (e.g., seizure control)
- Medication
- Physical limitations including hearing and vision
- Motor skills
- Cognitive recovery
- Needed assistive devices
- Continuing rehabilitation needs
- Behavior patterns
- Communication Skills

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Team to get the following information.

- Medical status.
- Medical management (e.g., seizure control).
- Medication.
- Physical limitations (including hearing and vision).
- Motor skills.
- Cognitive recovery.
- Needed assistive devices.
- Continuing rehabilitation needs.
- Behavior patterns.
- Communication skills.

BRIEFLY REVIEW the assessment handout Test Instruments for Neuropsychologic Assessment.

EMPHASIZE there is a flexible or fixed battery approach. The Halstead-Reitan Neuropsychological Battery and Luria Nebraska Neuropsychological Battery are fixed batteries.

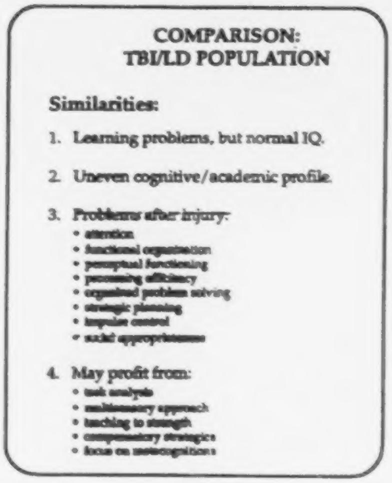
- Batteries are normed on large populations.
- Clinical judgment, however, is required to interpret the results.

DISCUSS issues with assessing TBI children:

- Obtaining appropriate information from the treatment facility will be helpful, but much assessment, both informally and formally will need to be done. The ongoing rate of recovery may render the initial hospital assessments outdated.
- The school psychologist and other personnel may be involved in performing current formal and informal assessments.
- State guidelines indicate that assessments and interventions should be aimed towards

ensuring:

  - A continuum of regular education service.
  - Evaluation and determination of services required.
  - Identification of appropriate educational environments (regular classroom and/or special education.
  - Maintenance of suitable levels of performance throughout the academic program.
  - Development of the greatest possible degree of independence.
  - Establishment and maintenance of positive social relationships.
- Be aware of confounding variables such as physical limitations, medication effects, fatigue, and environmental distractions.
- Testing the student during a period of dramatic change (e.g., change in medications, seizure activity) will likely be less useful than performing an assessment during a more stable period.
- Remember that test results reflect the student's abilities on a given day and in a restricted setting with few distractions. The testing procedure also presents constant directions to the student. Self-initiating skills will be difficult to evaluate under those conditions.
- The student should receive informal evaluations in a variety of conditions such as in small groups, large groups, or in one-to-one interactions. Routine teacher probe and daily informal assessment will be critical for looking at performance.

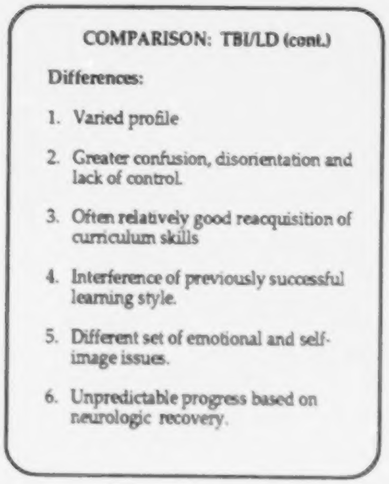


COMPARISON: TBI/LD POPULATION

Similarities:

1. Learning problems, but normal IQ.
2. Uneven cognitive/academic profile.
3. Problems after injury:
   - attention
   - functional organization
   - perceptual functioning
   - processing efficiency
   - organized problem solving
   - strategic planning
   - impulse control
   - social appropriateness
4. May profit from:
   - task analysis
   - multisensory approach
   - teaching to strength
   - compensatory strategies
   - focus on metacognitions

RE-ENTRY
OH-8

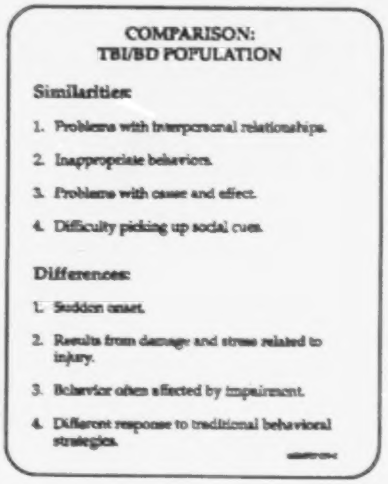


COMPARISON: TBI/LD (cont.)

Differences:

1. Varied profile
2. Greater confusion, disorientation and lack of control.
3. Often relatively good reacquisition of curriculum skills
4. Interference of previously successful learning style.
5. Different set of emotional and self-image issues.
6. Unpredictable progress based on neurologic recovery.

RE-ENTRY
OH-9



COMPARISON: TBI/BD POPULATION

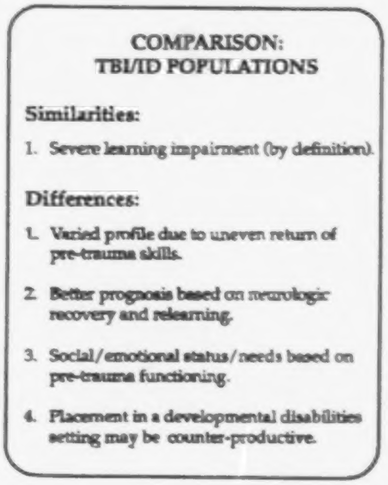
Similarities:

1. Problems with interpersonal relationships.
2. Inappropriate behaviors.
3. Problems with cause and effect.
4. Difficulty picking up social cues.

Differences:

1. Sudden onset.
2. Results from damage and stress related to injury.
3. Behavior often affected by impairment.
4. Different response to traditional behavioral strategies.

RE-ENTRY
OH-10



COMPARISON: TBI/ID POPULATIONS

Similarities:

1. Severe learning impairment (by definition).

Differences:

1. Varied profile due to uneven return of pre-trauma skills.
2. Better prognosis based on neurologic recovery and relearning.
3. Social/emotional status/needs based on pre-trauma functioning.
4. Placement in a developmental disabilities setting may be counter-productive.

RE-ENTRY
OH-11

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STATE that TBI students have a number of similar problems as other special education populations but also have a number of differences.

NOTE TO PRESENTER: do not go over each problem, just emphasize the **differences.**

DESCRIBE similarities and differences between TBI and:

RE-ENTRY OH-8 & 9

- Learning Disabilities (LD)

RE-ENTRY OH-10

- Behavioral Disorder (BD)

  (Highlight the fact that the injury may interfere with the student's ability to modify his/her own behavior.)

RE-ENTRY OH-11

- Intellectual Disabilities (ID)

RE-ENTRY
OH-12

TYPICAL IEP INCLUSIONS

- Specific service provisions.
- Specific educational and related services to be provided.
- Projected amount of each service instruction and duration of services.
- Evaluation procedures to measure/monitor progress.
- The extent to which the student will participate in regular classroom programs.
- The schedule to monitor progress.

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THE IEP

EMPHASIZE that the IEP will be the same as any other student, keeping in mind an individualized approach depends on many factors including the severity of the injury and the age of the child.

STATE that the initial IEP meeting will be important for developing strategies to assist the student.

- The extent and variety of needs that TBI students exhibit must be taken into consideration.
- The IEP, by federal mandate, must address the current level of educational performance in all areas affected by the disability, and develop **annual** goals and **short-term** objectives which need to be reviewed ***frequently.***

RE-ENTRY OH-12

- The IEP will need to include:
    - Specific service provisions.
    - Specific educational and related services.
    - Projected amount and duration of each service instruction.
    - Evaluation procedures to measure/ monitor progress and the schedule to monitor progress.
    - The extent to which the student will participate in regular classroom programs.

NOTE THAT:

- The IEP for a TBI student will generally be an 'evolving' one, showing erratic changes compared with the traditional IEP for special education students. *Within the first several months after an injury, recovery may be sporadic and sometimes dramatic. The IEP needs to be reviewed frequently during the first*

RE-ENTRY
OH-13

PROGRAMMING CONSIDERATIONS

- Ways the student learns best.
- Curricula.
- Direct retraining.
- Ancillary services needed.
- Frequent review of services.
- Smaller student/teacher ratio.
- Strict behavioral programming.
- Compensatory strategies.

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three months and periodically after that.

- *For each successive school year, an IEP review prior to or soon after the return to school from summer vacation is a good idea. This provides a necessary 'troubleshooting' session for program implementation and logistical problems that may have arisen. Year-round schooling may be more appropriate than the traditional 9-month format.*

NOTE TO PRESENTER: If the issue of Extended School Year (ESY) comes up, be prepared to refer to the state rules on regression recoupment.

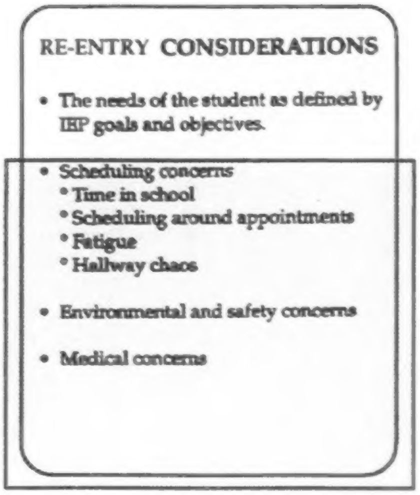
REMEMBER: The youngster who is eligible for special education is entitled to individualized services through the IEP process, including extended school year.

EMPHASIZE that the educational plan for TBI students should address both strengths and weaknesses of the student. Programming issues to be considered include:

RE-ENTRY OH-13

- Looking at the ways the student learns best.
- Attending to curricula.
- Implementing appropriate direct retraining.
- The variety and degree of ancillary services needed.
- The necessity for more frequent review of services.
- The smaller student/teacher ratio.
- The prevalence of need for strict behavioral programming.
- Implementing appropriate compensatory strategies.

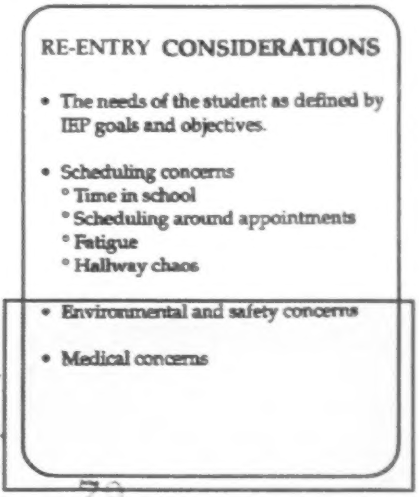
RE-ENTRY
OH-14



RE-ENTRY CONSIDERATIONS

- The needs of the student as defined by IEP goals and objectives.
- Scheduling concerns
  - Time in school
  - Scheduling around appointments
  - Fatigue
  - Hallway chaos
- Environmental and safety concerns
- Medical concerns

RE-ENTRY
OH-14 cont.



RE-ENTRY CONSIDERATIONS

- The needs of the student as defined by IEP goals and objectives.
- Scheduling concerns
  - Time in school
  - Scheduling around appointments
  - Fatigue
  - Hallway chaos
- Environmental and safety concerns
- Medical concerns

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REFER participants to the handout Examples of Compensatory Strategies for Cogniti....ve Impairments, and Effective Management of the Closed Head Injured Child in the School Setting.

STATE that these handouts may be useful when planning educational programming for TBI students. We will look at them later in the Case Study section.

RE-ENTRY CONSIDERATIONS

RE-ENTRY OH-14

STATE that placement must be determined based on the needs of the student as defined by the goals and objectives in the IEP.

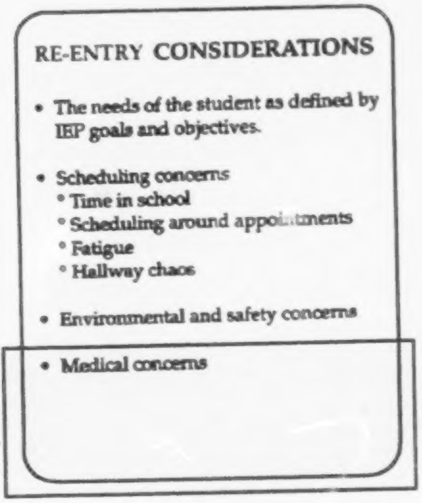
BRIEFLY DISCUSS each of the points on the overhead as follows:

NOTE TO PRESENTER: You may wish to refer to the Suggested Re-entry Checklist Handout for some of the following items.

DESCRIBE scheduling concerns:

- The student may be able to participate in a full day of regular programming, but initially it's likely that he/she may need to participate in a different arrangement such as part-time regular classroom, or part-day special education, self contained classrooms or homebound study.
- Scheduled appointments for different therapies will need to be considered as well as scheduling that is sensitive to the fatiguing effects of school in the TBI child.

- Fatigue factors:



RE-ENTRY **CONSIDERATIONS**

- The needs of the student as defined by IEP goals and objectives.

- Scheduling concerns
  - ° Time in school
  - ° Scheduling around appointments
  - ° Fatigue
  - ° Hallway chaos

- Environmental and safety concerns

- Medical concerns

RE-ENTRY
OH-14 cont.

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  - Length of day.
  - Academic demands.
  - Medical condition and/or medication.
  - Mobility of the student.
  - Size of the campus.
  - Overstimulation by the environment.
  - Need for rest time.
- Allow the student to leave class early in order to avoid hallway chaos.

DESCRIBE environmental and safety concerns and modifications. There are many modifications that can be made to the classroom, the student's desk, seating arrangements, and individual assistance that will facilitate optimal learning opportunities.

DISCUSS the concerns:

- TBI students may easily get lost on the campus and require extra assistance such as having a buddy system.
- They may require easy access to lavatory facilities and cues to get back to the classroom.
- They may require extra room for a wheelchair or walker.
- They may be on a special diet.
- They may have visual field difficulties.
- They may have poor tolerance for classroom noise levels, and/or visual stimulation.
- They will likely need memory aids, calculators, a scribe, or lecture notes; and may need special planning for lunch, recess, and assemblies.
- They may not be able to walk and carry their lunch tray in the cafeteria.
- The students may be awkward in using

RE-ENTRY **CONSIDERATIONS**

- The needs of the student as defined by IEP goals and objectives.
- Scheduling concerns
  - ° Time in school
  - ° Scheduling around appointments
  - ° Fatigue
  - ° Hallway chaos
- Environmental and safety concerns
- Medical concerns

RE-ENTRY
OH-14 cont.

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assistive devices such as a wheelchair or walker.

STATE that the handout titled Environmental Modifications in the Classroom, addresses strategies for dealing with environmental and safety concerns.

ALLOW participants about two minutes to read this handout.

DISCUSS medical considerations for the student with TBI.

- Children and adolescents experiencing brain injuries may require ongoing medical management for a variety of problems (headaches, seizures, fatigue, increased irritability, neck and back pain, blurred vision, etc.).
- Medically fragile TBI students often are prone to seizures and/or secondary brain damage; therefore, they may require the use of cautionary procedures or be excluded from particular activities. They may also need staff who are trained to work with tracheotomies and other aspects of extensive physical impairment. The student may also need to be in a room where privacy for catheterization, rest after seizures, diapering, etc. is available.

STATE that the guidelines for medically fragile children are included in your resource materials.

REFER participants to Medications Commonly Used After TBI (found in workbook section).

- Teachers should have a basic understanding of medications the student is on and potential side effects from it.

  - Medication can affect the student's physical and behavioral classroom performance.
  - Some medications are preferred over others for TBI populations (e.g., tricyclic, antidepressant preferred over venzodiazgines.
  - Feedback to therapists and family noting day-to-day observations regarding headaches, seizures, etc. is helpful.
- The school should keep a log on medication dispensing.
- It will be useful to assist the student in self-monitoring of medication needs and effects.
- The student may require rest periods throughout the day due to side effects of medication.
- The student may need schedule adjustments and/or frequent drinks due to changes in body functions as a result of medication.

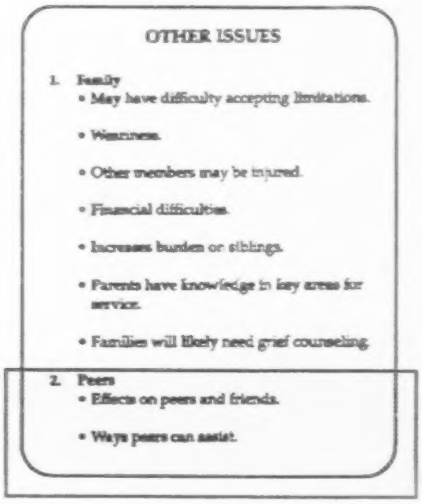
FAMILY ISSUES

EMPHASIZE the impact of TBI on the whole family as it relates to working with them and their child.

STATE that:

- Families can survive and cope with TBI if they have a system of internal and external support.
- "Health and education professionals can play a crucial role in helping head injured students achieve their highest potential by incorporating families into the rehabilitation process and by advocating for a continuum of services that supports and nurtures positive family adaptation." (Martin, 1988)

RE-ENTRY
OH-15



OTHER ISSUES

1. Family
   - May have difficulty accepting limitations.
   - Weariness.
   - Other members may be injured.
   - Financial difficulties.
   - Increases burden on siblings.
   - Parents have knowledge in key areas for service.
   - Families will likely need grief counseling.
2. Peers
   - Effects on peers and friends.
   - Ways peers can assist.

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- There are a number of issues that impact the family when one family member has suffered a TBI. Each transition in the child's life such as going from elementary to junior high, may cause the family to reexamine these issues.

RE-ENTRY OH-15

DISCUSS ***each*** of the issues that impact the family when a student has suffered TBI. The family may display any or all of the following characteristics:

- They may feel that the student is OK once out of the hospital, and may have difficulty accepting limitations incurred as a result of the injury.
- They may be very weary from extensive amounts of time and stress involved in the hospitalization and care of their TBI child.
- Other members of the family may also be injured, particularly in the case of a motor vehicle accident.
- Any family may find themselves strapped with enormous medical costs. This could be compounded if one or both of the working parents has missed time from work due to caring for the TBI child, or due to their own injuries in the case of an accident.
- There may be an increased burden on siblings of the TBI student: extra chores or providing daily living care for their sibling. They may feel guilt related to the injury of their sibling. They might also be angry or jealous of the additional attention being paid to their brother or sister. These conditions may need monitoring in schools, also.

- The parents may have knowledge of problem areas that can be addressed early on in reentry of the student into the school.

DISCUSS the necessity to be familiar with and be able to address the grieving process that may be happening in the family.

STATE that the family will experience shock, denial, anger, relief, sadness, and adaptation as they cope with the injury.

- Families will have gone through the grieving process and felt relief several times over before their student enters the school.
- Each transition from ICU to regular hospital, from hospital to rehabilitation, from rehabilitation to home, home to school, or school to work will present a situation where additional grieving can occur and an opportunity for help to be given. Each time, the family will go through the basic grieving stages over the fact that their student may never be the same as prior to the injury. Transitions, milestones (e.g., driving age) may also trigger the grieving process.
- There are many resources, support groups, and books available to assist with the grieving process.
- Again, health and educational professionals can help these students achieve their highest potential by involving parents.

PRESENT (IF TIME PERMITS): the video "Problems and Coping Strategies of Mothers, Siblings, and Young Adult Males with Traumatic Brain Injury."

OTHER ISSUES

1. **Family**
   - May have difficulty accepting limitations.
   - Weariness.
   - Other members may be injured.
   - Financial difficulties.
   - Increases burden on siblings.
   - Parents have knowledge in key areas for service.
   - Families will likely need grief counseling.
2. **Peers**
   - Effects on peers and friends.
   - Ways peers can assist.

RE-ENTRY
OH-15 cont.

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PEERS

DISCUSS the effects of TBI on the peers and friends of the student. Many peers will be uncomfortable with the condition of their friend and will gradually drift away. Others may tease or ridicule the student as they see unusual behaviors with no knowledge of accompanying conditions of TBI students.

BRIEFLY DESCRIBE ways in which peers can assist the TBI student:

- Serve as hallway buddies to assist a TBI student who gets lost easily.
- Form study groups to assist in class assignments (Study Buddies).
- Take part in groups helping to reeducate the TBI student in interpersonal relations and social skills.
- Assist in involving the TBI student in extracurricular activities such as ball games and dances.

STATE that new friendships and supports can be facilitated, but cannot be forced. New peer groups will likely form.

DEVELOPMENTAL ISSUES

STATE that understanding the natural processes of development enables the educator to determine the current stage of development of the student, which enables development of realistic expectations.

DISCUSS the following points:

- Human Growth and Development proceeds along a hierarchical sequence unless it is disrupted by deprivation, illness, or injury.
- The age at which the developmental process is disrupted may have immediate and/or long lasting consequences.
- A child may regress or not progress intellectually or socially because a part of the brain needed for a current or future function has been damaged.
- Each age group has its particular vulnerabilities depending on the stage of maturation at the time of injury.

EMPHASIZE that a deficit may not be evident until the student enters a new developmental stage, at which time the student is unable to acquire appropriate social skills or adaptive behaviors. (For example, following a TBI at age 5, skills not used or normally developed until age 14 will not show until then.)

School re-entry following a Traumatic Brain Injury is affected by many factors. Collaboration among parents, hospital personnel, and educators ensures successful re-entry programs for these children and adolescents.

UNIT 3

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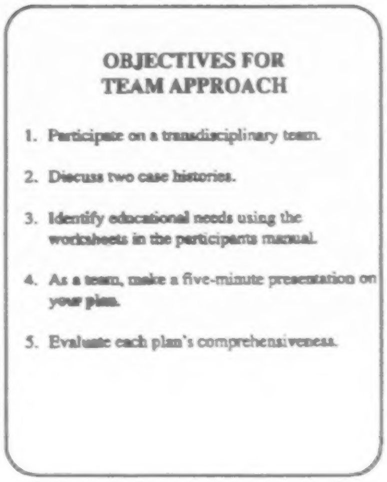
USING THE TEAM APPROACH

UNIT 3

USING THE TEAM APPROACH



OBJECTIVES FOR TEAM APPROACH

1. Participate on a transdisciplinary team.
2. Discuss two case histories.
3. Identify educational needs using the worksheets in the participants manual.
4. As a team, make a five-minute presentation on your plan.
5. Evaluate each plan's comprehensiveness.

TEAM APPROACH
OH-1

UNIT 3

USING THE TEAM APPROACH:
Integration of Cognitive, Behavior, Communication, and Other Therapies.

INTRODUCTION

BEGIN by stating the **goal** of this presentation: to discuss and develop an integrated program for a TBI student named Kris. In preparation for this activity, the presenter will review another case study (Denise) as a model for the participant's work with Kris.

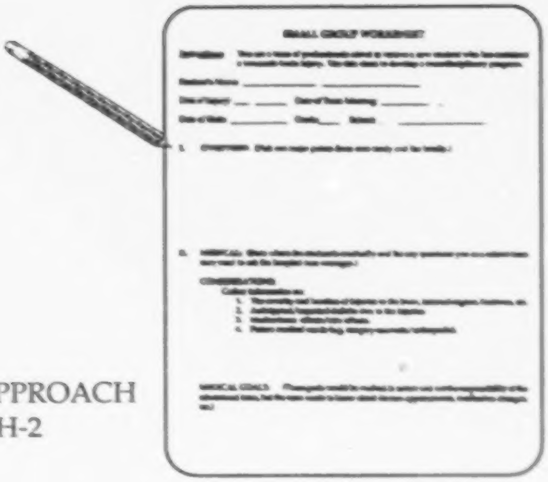
TEAM APPROACH OH-1

STATE the **objectives** of this presentation:
1. Participate on a transdisciplinary team.
2. Discuss two case histories.
3. Identify educational needs, using the worksheets in the participants manual.
4. As a team, make a five-minute presentation on your plan.
5. Evaluate each plan's comprehensiveness.

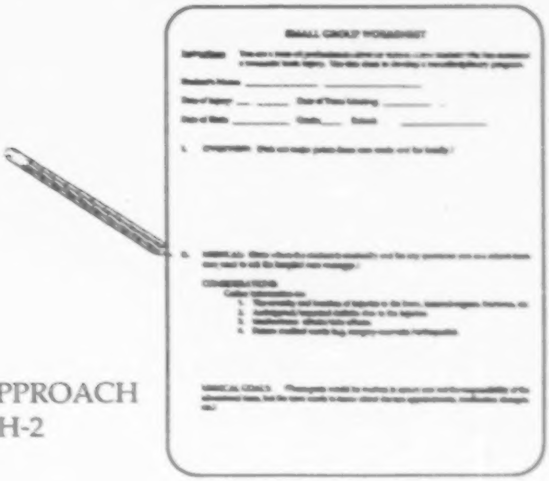
FIRST CASE STUDY (done in the large group)

NOTE TO PRESENTER:
- Model the plan development procedure using the "Denise" case study. Respond to questions and discuss the points as needed.
- Correlate the information that follows with the appropriate sections on the overhead as well as the yellow handouts in the workbook.

ASK participants to read the Denise Case Study.



TEAM APPROACH
OH-2



TEAM APPROACH
OH-2

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REFER participants to the first set (3 pages) of the Small Group Worksheet. Highlight the fact that participants not only need to answer the questions, but write down the information that is needed to complete the task. You should takes notes on the questions that need to be asked when completing these worksheets for analyzing not only Denise but any student who is re-entering school after a TBI.

TEAM APPROACH OH-2

REFER participants to worksheet section.
I. Overview.

ASK participants to list on their worksheet the major points to be considered in the overview section.

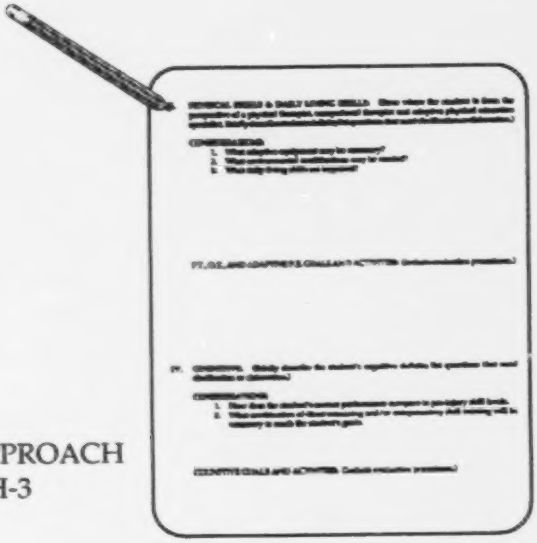
- A timing of one minute may be used to keep this activity short.
- List participants' points on a blank overhead for a brief discussion.

EMPHASIZE that information received from hospital or rehabilitation personnel may not answer all the questions that the transdisciplinary team may have.

REFER participants to the worksheet section.
II. Medical, and have them answer questions in the Consideration Section. (One minute timing again.)

DISCUSS issues with the whole group using a blank overhead to record relevant points.

EMPHASIZE that formulating these goals and activities are not the responsibility of the educational team but the team should be aware of the medical goals. Denise's medical discharge goal was..



TEAM APPROACH
OH-3

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II. Medical Goals and Activities

1. Denise will demonstrate appropriate follow-up with her physician and follow through with recommendations.
   - Denise will, with assistance as needed, follow through with physician appointments and recommendations.

TEAM APPROACH OH-3

REFER participants to the worksheet page 2, section **III. Physical Skills and Daily Living Skills**.

- Ask them to quickly write answers under the Consideration section.
- Discuss the responses briefly using a blank overhead.

EMPHASIZE that since these are Denise's needs, choose activities that would help her fulfill these skills. (One minute timing on goals and activities.)

COMPARE participants' activities with Denise's discharge goals written under

III. Physical Skills and Daily Living Skills Goals and Activities.

1. Denise will increase overall endurance to participate in 30 hours a week of productive activity.
   - Denise will participate 30 minutes daily in a physical exercise program; i.e., bicycling and/or walking. Denise will have directed supervision with these activities.
2. Access the community by simple pathfinding with minimal verbal cues.
   - Locate unfamiliar locations by directing car driver with moderate assist.
3. Independently perform household tasks with moderate verbal cues.

- Denise will initiate, organize, and complete moderately complex home tasks and self-care.

REFER participants to RE-ENTRY handout Environmental Modifications in the Classroom for Instruction of Children With Head Injuries. **STATE** that items #3, #7, #11, and #13 are considerations for Denise.

FOR example:

- Workspace with fewer distractions (#3).
- Compensatory equipment (#7).
- Modify length of school day (#11).
- Reduce length of assignments / use easier materials (#13).

REFER participants to Physical Therapy, Occupational Therapy, and adaptive P.E. goal and activities. Ask them to briefly generate appropriate activities (one-minute timing).

REFER participants to:

- TEAM APPROACH handout Motor Issues.
  - Note that Denise needs written communication (under Occupational Therapy item 1, 5th bullet) and incorporating activities into the school routine that would improve her motor abilities (under Occupational Therapy item 2, 2nd bullet).
  - Point out Physical Therapy and Adaptive P.E. sections of the handout.
- **ALSO** point out the handout on Life Centered Career Education Opportunities and emphasize that the information in the handout provides a

good guide for identifying and developing life skills.

REFER participants to section
IV. Cognitive.

- Quickly write answers under Considerations section. A one-minute timing to write down goals and/or activities could be used.
- Discuss answers briefly using the overhead.

COMPARE participants' activities with Denise's discharge goals...

IV. Cognitive Goals and Activities.

1. Independently use compensatory strategies to facilitate improved memory performance.
    - Denise will be able to fill in daily schedule in her memory book with minimum cueing from therapist.
    - Denise will retrieve information from her memory book pertaining to her daily schedule with 80 percent accuracy.
    - Denise will utilize a watch with an alarm (external cue) to take her medication 100 percent of the time (criteria maintained over seven days; regularly monitored by nursing staff).
2. Independently demonstrate increased ability to use previously studied math functions.
    - Denise will complete story problems involving multiplication, division, addition, and subtraction with at least 90 percent accuracy. Denise will perform slightly complex algebraic calculations with at least 80 percent accuracy.

REFER participants to RE-ENTRY handout Examples of Compensatory Strategies for Cognitive Impairments. The following items that apply to Denise:

- Attention/Concentration - Section B #'s 1 and 2.
- Orientation - Section A #3, and Section B #1.
- Input Control - Section A #1.
- Reasoning, Problem Solving, Judgment - #2.
- Self-Monitoring - #3.

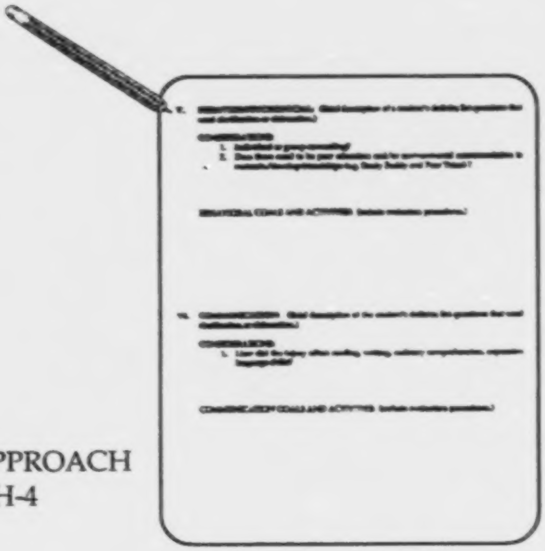
ASK participants to look at the Effective Management of the Closed Head Injured Child handout for consideration of Denise.

NOTE

- ° The present level of functioning/teacher expectations (#1).
- ° Time to respond (#14).
- ° Repeating directions (#18).
- ° Small group situations (#27).
- ° Alternative actions, structured practice (#32).

EMPHASIZE that the participants have moved into the educational realm of expertise and that the discharge goals and activities may be incomplete when compared to those the educational team would develop for Denise.

ASK participants to look at the TEAM APPROACH handout, Cognitive Deficits and Strategies for Intervention. Indicate that this is a compilation of several references including those identified in this training.



TEAM APPROACH
OH-4

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NOTE that the final page of this handout covers executive system. It is important to discuss control issue mentioned under the first bullet in Illustration section.

TEAM APPROACH OH-4

REFER participants to section
V. Behavior/Psychosocial.

- Quickly write down goals and/or activities that could be used with Denise (one minute timing).
- Discuss briefly, using the overhead.

COMPARE participants' activities with Denise's discharge goals:
V. Behavioral Goals and Activities:

1. Family will investigate possible family counseling benefits offered.
    - Denise's mother will investigate family counseling benefits offered by her work and/or insurance coverage.
2. Family will have increased knowledge of TBI and how it impacts the family unit as well as Denise.
    - Denise and her family will demonstrate increased knowledge of TBI.

EMPHASIZE that these are hospital discharge goals and activities, and as educators we will want to focus more on educational implications and social issues during the team process.

REFER to TEAM APPROACH handout, Functional Analysis and the F.A. worksheet which is designed to enable the team to define, observe, and analyze the TBI student's behavior.

STATE that behavior must be carefully observed and data must be taken to determine the intent of the behavior. This will help the student achieve appropriate social skills. Page 30 of the LRBI gives further information on functional analysis.

REFER to TEAM APPROACH handout, Cross Reference for Behavior Intervention Resources; and cross reference with materials in LRBI, BEST, and the TEAM APPROACH handout, Guidelines for Managing Behavior.

BRIEFLY DISCUSS contents of these handouts and demonstrate use of the Cross Reference sheet using the agitation and/or irritability section.

ASK participants to look at the information from the Guidelines for Managing Behavior handout that have applicability to Denise.

- Agitation and irritability.
- Secondary depression and withdrawal.

REFER participants to section:

VI. Communication.

- Quickly write answers under considerations section, using one-minute timing to write down goals and/or activities that could be used with Denise.
- Discuss briefly using the overhead.

COMPARE participants' suggested activities with Denise's discharge goals:

VI. Communication Goals and Activities.

- There are no functional goals identified for this reporting period.

EMPHASIZE the difference between what the hospital felt was important, no communication goals, and the critical need for communication that the educators may need to identify.

REFER participants to the three TEAM APPROACH handouts, Communication Issues Related to Traumatic Brain Injury, Pragmatic Protocol, and Communication Issues.

STATE that although these three handouts are designed for communication specialists, they will aid other educators not specializing in the field of language. The Speech Language Pathologist is a critical member of any TBI team.

ASK participants to note in section VI Word Retrieval and Written Language as concerns for Denise. These can be found on the Communication Issues handout pages 31 and 32.

REFER participants to Section VII. Write considerations for other programming (one- minute timing). There are no other considerations on Denise's discharge goals.

REFER participants to the article titled General Principles of Intervention. Review these seven principles using one of the following variations:

1. Presenter may read through handout aloud with participants.
2. Presenter may describe content of handout.

3. Presenter may ask the participants to read it silently.

SETTING UP THE TEAM ACTIVITY

STATE that your school has just received word about Kris and a meeting to discuss her needs is to be held as soon as possible. The team will develop a program that might be used during Kris' initial staffing.

EMPHASIZE that the RE-ENTRY and TEAM APPROACH handouts referred to in the Denise case study are to be used to develop a comprehensive plan for Kris.

ORGANIZE participants into transdisciplinary teams:

- Ask them to locate the Kris Case Study and the other set of Small Group Worksheets.
- Another handout that may be helpful for teaming is Collaborative Problem-Solving Worksheet.
- Allow teams one hour to develop plans. (This time may be flexible depending on the number of participants.)

DEBRIEFING

REFER participants to the Potential Deficits in the TBI Student handout.

ASK the participants to:

- Listen carefully so key issues can be discussed between each presentation.
- Use this handout to make sure all needs areas are covered.

ALLOW teams five minutes to present their plans.

- Variations for plan presentation.

TEAM
BUILDING
IMMEDIATELY

TEAM APPROACH
OH-5

A. Each team may report on the entire plan.
B. Each team may report on a different section of of the plan.

- Discuss points that need to be emphasized or that were overlooked by participants particularly in the cognitive, communication, behavior/social, and motor deficits of Kris.

NOTE TO PRESENTER: a model of the Kris Small Group Worksheet has been provided for your use during this debriefing.

TEAM APPROACH OH-5

CLOSE the debriefing using this overhead to emphasize the need to work in teams when developing a program for a TBI student.

SMALL GROUP WORKSHEET — MODEL ANSWER

Instructions: You are a team of professionals about to receive a new student who has sustained a traumatic brain injury. Use this sheet to develop a transdisciplinary program.

Student's Name: ______________________________

Date of Injury: __________ Date of Team Meeting: __________

Date of Birth: __________ Grade:____ School: ____________________

I. OVERVIEW: (Pick out major points from case study and list briefly.)

Normal developmental milestones. Poor motor coordination. As and Bs in school. No current school performance data. Possible peer problems. Inconsistent academic skills K-2nd grade. Mother was involved in the accident. What is the mother's condition? Speech Language is an issue. Potential seizures?

II. MEDICAL: (State where the student is medically and list any questions you as a school team may need to ask the hospital case manager.)

CONSIDERATIONS:

1. Right frontal contusion and small left occipital contrecoup contusion.
2. Deficits in:
   Motor function.
   Vision.
   Poor planning and organization.
   Impaired memory.
   Impaired ability to use social cues.
   Attention, disturbances.
   Inappropriate social behavior.
   Problems with inhibition.
   Impaired language comprehension and verbal expression.
3. Medications: Tegreitol for seizure control, side effects of sedation, nausea, blurred vision, slow processing.
4. Future medical needs: vision evaluation, follow-up on seizures, hearing evaluation.

GOALS: (These goals would be medical in nature and not the responsibility of the educational team, but the team needs to know about doctor appointments, medication changes, etc.)

1. Follow-up on hearing and vision,
2. How long on medication, dosage, etc.

III. **PHYSICAL SKILLS and DAILY LIVING SKILLS:** (State where the student is from the perspective of a physical therapist, occupational therapist and adaptive physical education specialist. Briefly describe student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. Investigate keyboarding, computer.
2. Environmental, additional time to move from class to class, eating situation she may have to eat in class. May need a buddy to go with her to lunch, etc.
3. Daily living skills: eating, walking, dressing, writing.

GOALS:

1. OT and PT evaluation. Gather prior assessments.
2. Look at school environment for adaptations necessary.
3. Assess physical endurance.
4. Consider placement options including homebound, half-day, etc.

IV. **COGNITIVE:** (Briefly describe the student's cognitive deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. She/he was on grade level.
2. Team should concentrate on retraining lost academic skills, look at compensatory skill training at a future time.

GOALS:

1. Gather assessment information from rehabilitation center.
2. Assess in various environments for current information.
3. Consult with vision specialist on needed training.
4. Modify curriculum expectations such as amount of work completed.

V. **BEHAVIOR/PSYCHOSOCIAL**: (Brief description of a student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. What is status of mother after accident? Who is doing the caretaking?
2. Peer difficulties. Ways for peer support, peer tutor.

GOALS:

1. Gather assessment information from rehabilitation center.
2. Investigate need for family support.
3. Home visits from peers. Brief school visits.

VI. **COMMUNICATION**: (Brief description of the student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. Dysarthria, problems with directions, writing, word retrieval.

GOALS:

1. Gather assessment information from rehabilitation center.
2. Investigate reading ability and written language.
3. Structure adequate communication opportunities.
4. Comprehensive speech and language evaluation.

VII. **Other Programming Considerations**: 504, Special Eduation, school placement case manager, ongoing assessment yearly, peer and staff education.

GOALS:

1. Gather assessment information from rehabilitation center.

UNIT 4

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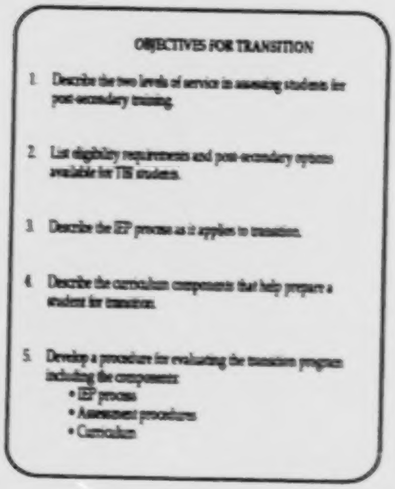
THE TRANSITION PROCESS

UNIT 4

THE TRANSITION PROCESS

TRANSITION
OH-1



OBJECTIVES FOR TRANSITION

1. Describe the two levels of service in assessing students for post-secondary training.

2. List eligibility requirements and post-secondary options available for TBI students.

3. Describe the IEP process as it applies to transition.

4. Describe the curriculum components that help prepare a student for transition.

5. Develop a procedure for evaluating the transition program including the components:
    - IEP process
    - Assessment procedures
    - Curriculum

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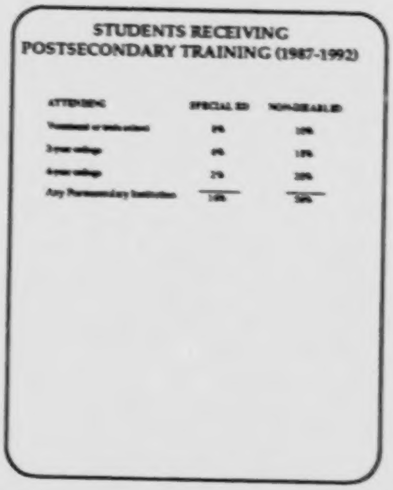
TRANSITION
OH-2



STUDENTS RECEIVING
POSTSECONDARY TRAINING (1987-1992)

UNIT 4

THE TRANSITION PROCESS

INTRODUCTION

BEGIN by stating the goal of this presentation: to describe the process of preparing the TBI student for the world of work.

TRANSITION OH-1

STATE the objectives of this presentation:

1. Describe the two levels of service in assessing students for postsecondary training.
2. List eligibility requirements and post-secondary options available for TBI students.
3. Describe the IEP process as it applies to transition.
4. Describe the curriculum components that help prepare a student for transition.
5. Develop a procedure for evaluating the transition program including the components:
   - IEP process.
   - Assessment procedures.
   - Curriculum.

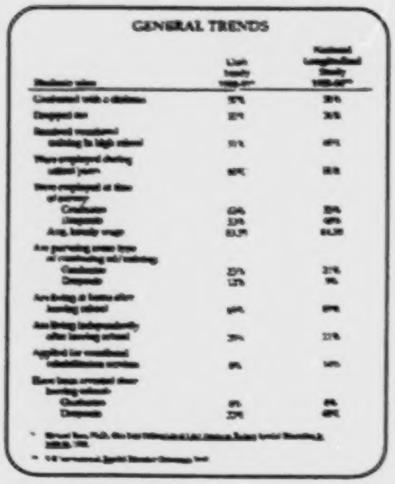
REFER participants to the handout titled Individuals with Disabilities Educational Act (IDEA).

NOTE TO PRESENTER: Go over each point from the handout.

TRANSITION OH-2

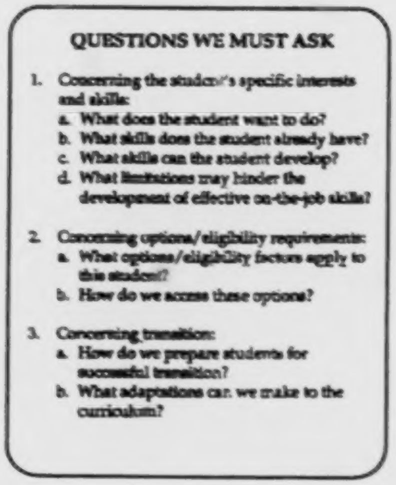
PRESENT the findings from the SRI longitudinal study of transitional issues. The study investigated how successful youth with disabilities were in entering postsecondary education.

TRANSITION
OH-3



GENERAL TRENDS

TRANSITION
OH-4



QUESTIONS WE MUST ASK

1. Concerning the student's specific interests and skills:
    a. What does the student want to do?
    b. What skills does the student already have?
    c. What skills can the student develop?
    d. What limitations may hinder the development of effective on-the-job skills?
2. Concerning options/eligibility requirements:
    a. What options/eligibility factors apply to this student?
    b. How do we access these options?
3. Concerning transition:
    a. How do we prepare students for successful transition?
    b. What adaptations can we make to the curriculum?

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EMPHASIZE the discrepancy between students with and students without disabilities in terms of percentages receiving **any** postsecondary education or training. **State** that students with disabilities need extra help and preparation when making the transition from school to the world of work or to postsecondary institutions.

TRANSITION OH-3

REFER participants to the handout titled General Trends which compares U.S. data (SRI study) with Utah data.

NOTE TO PRESENTER: If a participant points out that the U.S. data are for a different year, state that the information shown are the latest data available. It takes longer to collate and disseminate federal information.

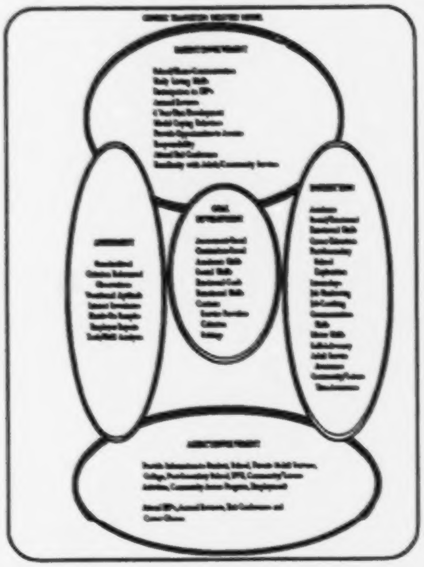
TRANSITION OH-4

REVIEW the questions about the TBI student's transition from school to work that **must** be answered.

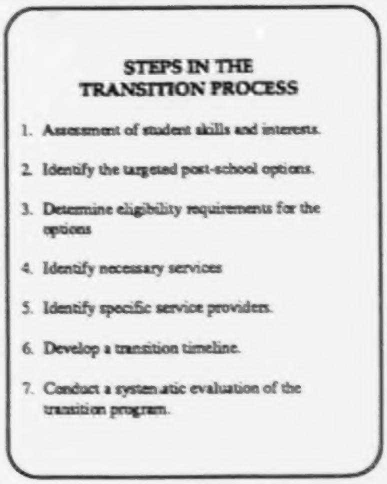
NOTE TO PRESENTER: Go over each set of questions.

DEFINE transition services:

- A coordinated set of activities for a student.
    - Designed within an outcome-oriented process.
    - Promotes movements from school to post-school activities.
    - Activities include postsecondary education, vocational training, integrated employment (including supported employment), continuing adult education, adult services, independent living, or community participation.



TRANSITION
OH-5a



STEPS IN THE TRANSITION PROCESS

1. Assessment of student skills and interests.
2. Identify the targeted post-school options.
3. Determine eligibility requirements for the options
4. Identify necessary services
5. Identify specific service providers.
6. Develop a transition timeline.
7. Conduct a systematic evaluation of the transition program.

TRANSITION
OH-5b

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- The coordinated set of activities must be based on the individual student's needs deficits, taking into account the student's preferences and interests.

REFER participants to the handout, Transition Services and the IEP. Tell them this provides more indepth information concerning the Transition Services.

TRANSITION OH-5a

NOTE TO PRESENTER: Refer Generic Transition Delivery Model as a visual representation of the complexities of the Transition Process.

TRANSITION OH-5b

DESCRIBE the steps in the transition process:

1. Assessment of student skills and interests.
2. Identify the targeted post-school environment for the student:
    - Through assessment, obtaining information from the student and family, teachers and other service providers, and outside agencies.
    - Target skills necessary for successful transition.
3. Determine eligibility requirements for possible post-school options.
4. Identify the services necessary for the student:
    - Obtain information from assessment and provided by parents, teachers, service providers, outside agencies, and post-secondary institutions.
    - Develop goals for the IEP, and identify the services needed to attain those goals and to support the student after leaving school.
    - These services should be implemented before the student leaves the school environment

ASSESSMENT

- Rationale for assessment.
- Two level approach:
  1. First level of assessment (mild disabilities).
  2. Second level of assessment (moderate to severe disabilities).

TRANSITION
OH-6

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5. Service providers:
    - Identify the specific service providers.
    - Actively involve outside agencies in the transition process.
    - Develop clear interagency agreements which allocate responsibilities for service provision.
6. Develop a transition time line:
    - Include ongoing evaluation of the transition program.
    - Obtain input from the student, parents, teachers, other service providers, outside agencies, and postsecondary institutions.
7. Conduct a systemtatic evaluation of the transition program.

ASSESSMENT

TRANSITION OH-6

DISCUSS the rationale for assessment:

1. Assesssment of student skills and interests.
2. Identifying the student's strengths and weaknesses is important because:
    - An accurate description is necessary to target an appropriate post-school environment.
    - Assessment must **actively** involve the student.
    - The student and service providers need to recognize realistic goals and objectives.
3. It is important to review any past assessment information and student history in order to:
    - Determine the student's current level of functioning.
    - If the student's injury is recent, it is important to determine the student's preinjury vocational competence and interests.

NOTE TO PRESENTER: A two-level approach to assessment is considered in this presentation:

1. Assessment for the student referred to post-secondary training (mild TBI).
2. Assessment for the student referred to adult services (moderate to severe TBI).

EMPHASIZE that assessment must be completed prior to transition planning in order to determine the needs of the student.

DISCUSS the first level of assessment for TBI students who could be referred to Applied Technology Education, community college, universities, or other postsecondary training (mild disabilities). Assessment may include:

1. Psychological and educational testing:
    - Intelligence testing (Wechsler Intelligence scales, etc.).
    - Achievement testing (Woodcock-Johnson, etc.).
    - Behavioral observations (in a variety of settings).
    - Assessment of emotional or interpersonal difficulties which may prove to be obstacles to job success for TBI students.
    - Assessment of cognitive and perceptual-motor skills such as attention, concentration, distractibility, processing speed, and other skills.
2. Vocational testing:
    - Interests inventories and personal futures planning to assess the student's feelings and preferences about certain types of occupations and postsecondary options.

  - Examples include: The Gordon Occupational Checklist, The Minnesota Vocational Interest Inventory.
  - It is important to note that many TBI students have unrealistic ideas about vocational goals. For example, they may believe they are far more capable of performing a job than they really are.
- Pre-vocational and workplace basic skills assessment:
  - These can involve a work sample or job simulation. These types of assessment involve evaluation of production and general job-related behaviors by presenting the student with tasks that simulate those required in job settings.
- Development of a vocational tracking record.
  - This record lists all job experiences, job samples, job tryouts, and vocational training. The employer, student, and parent evaluate job experience and work-related behaviors, and include these evaluations on the tracking record.

DISCUSS the second level of assessment for TBI students who could be referred to adult services (moderate to severe disability). Assessment may include:

- Psychological and Vocational assessment (as in the first-level assessment procedures) are included.

  - Students with moderate to severe disabilities need a more in-depth assessment of skills.
- Medical information (if available) as provided by a physician or parent/guardian.
  - Detailed information about a student's physical and medical status is necessary to ensure safety in school and on the job.
  - Physical strengths, problems, and medication issues must be addressed.
- Assessment of functional performance in the following areas:
  - Independent living.
  - Recreation/Leisure.
  - Employability (cognitive skills, attention, initiation, perseverance, etc.).
  - Community participation.
  - Academics.
  - Self-determination and Self-Advocacy.
  - Health and physical care.
  - Personal/Social adjustment.
- Norm-referenced test assessment (Woodcock-Johnson, etc.).
- Behavioral/Adaptive skills assessment (ICAP-Inventory for Client and Agency Planning)

POSTSECONDARY OPTIONS

DESCRIBE the postsecondary options available for TBI students following completion of secondary school.

POSTSECONDARY OPTIONS

- College or university
- College preparation courses
- Vocational schools (applied technology centers)
- Vocational rehabilitation and independent living
- Competitive employment
- Job coaching
- Sheltered employment

TRANSITION
OH-7

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TRANSITION OH-7

EMPHASIZE that the assessment information helps in determining if a student is eligible for a particular option.

- **College or university:**
  - A few mildly disabled TBI students will be able to enter colleges or universities with no supportive services, but many require modifications in the academic environment.
  - Possible services include medical monitoring, speech and language therapy, tutoring, and writing clinics.
  - Most colleges and universities can provide literature about their services and eligibility requirements.
- **College preparation courses**:
  - This is an option for students not quite ready to enter college.
  - These non-credit earning courses prepare the student for entrance into specific colleges, and focus on self-advocacy skills, career courses, social skills classes, and the use of technology.
- **Vocational schools**:
  - This option allows for exposure to several vocations through methods such as career exploration programs, rather than in-depth preparation for an academic career. Too many options may be detrimental more than helpful; i.e., such as overwhelming choices.
  - Programs at vocational schools prepare students for careers in non-academic areas such as welding, drafting, autobody repair, office or clerical work, etc.
  - Students may be able to learn organizational and independent living skills as well.

- **Vocational rehabilitation and independent living:**
    - This option focuses on vocational training, daily living skills, and cognitive skill instruction.
    - Many TBI students lack the skills to function independently in the community. These skills include: use of public transportation, obtaining a driver's license, balancing a checkbook, budgeting, relating with peers and authority figures, and shopping for necessities.
    - Most vocational rehabilitation programs provide instruction in these skills.
- **Competitive employment:**
    - This option involves placement in a work setting with a minimum of ongoing support.
    - Success in a competitive job can be enhanced by providing guided experiences for the student in job seeking, interviewing, and internships.
    - Employers typically provide information on eligibility.
- **Job coaching:**
    - This form of supported employment involves pairing the student with a job coach who works with the student on the job from the first day.
    - The job coach helps the student by teaching skills, getting the required work done, and becoming more independent at work.
    - Once the student becomes adequately productive and connected to fellow employees who can offer assistance if necessary, the job coach may no longer be needed.

IEP PROCESS FOR TRANSITION

- Transition services must meet same criteria as other IEP components.
- Who should be involved in transition planning?
- Consent forms for release of information to outside agencies.
- Specific transition goals
- Areas of deficit.

TRANSITION
OH-8a

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- **Sheltered employment:**
  - A high level of supervision is provided for students who are unable to work independently.
  - Often this service is provided in conjunction with group living programs.

IEP PROCESS

TRANSITION OH-8a

STATE that transition services outlined in the IEP must meet the same criteria as any other component of the IEP:

- The student's current strengths and weaknesses are described, based on assessment information.
- Needs, and services to meet those needs, are specifically described, including who will provide the services.
- The least restrictive environment required to deliver needed services is also considered.
- Transition components must be included in a student's IEP no later than age 16 (preferably at age 14).

DISCUSS those who should participate in formal transition planning for the IEP:

- **Student:** to be included when transition goals are being discussed.
- **Parent(s):** are **encouraged** to participate in IEP meetings.
- **Teachers:** regular and special education teachers are necessary participants.
- **Service providers:** those already providing services to the individual such as occupational or physical therapist, speech/language pathologist, school psychologist, etc. should participate.

SPECIFIC TRANSITION GOALS

- Education
- Vocation
- Independent living
- Community
- Agency responsibilities

TRANSITION
OH-8b

- **Agency representative:** include other agencies (such as the Department of Vocational Rehabilitation), continuing educational, psychological, and medical services. This way, duplication of assessment measures can be avoided.

STATE the importance of completing the appropriate consent forms so information may be released to outside agencies assisting in transition.

TRANSITION OH-8b

DESCRIBE the specific transition goals to be addressed in the IEP:

- **Education**: determine what changes or additions must be made in the student's educational program to prepare him or her for a post-school setting.
- **Vocation**: based on assessment of the student's skills and interests, determine which post-school option is most appropriate, and which skills are necessary for this option.
- **Independent living**: determine the student's skill level in the area of independent living, and list services which can provide instruction in needed skills.
- **Community**: determine student's skill level in terms of independently accessing agencies and public transportation. In addition, list leisure activities.
- **Agency responsibilities**: list agencies which will be involved in the student's transition, and each agency's responsibilities.

TRANSITION
OH-8c

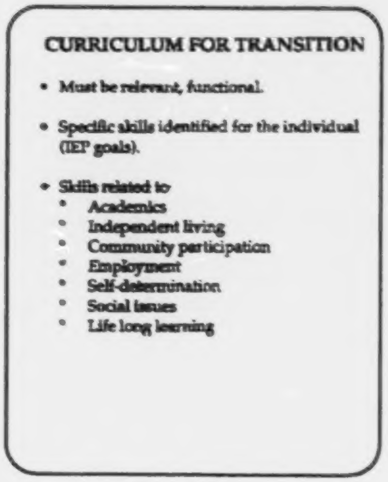
AREAS OF DEFICIT

- Medical
- Speech and language
- Sensory/motor skills
- Visual/motor skills
- Academic skills
- Cognitive skills
- Daily living skills
- Social and emotional factors

TRANSITION OH-8c

DISCUSS possible areas of deficit for which specific IEP transition goals may be developed:

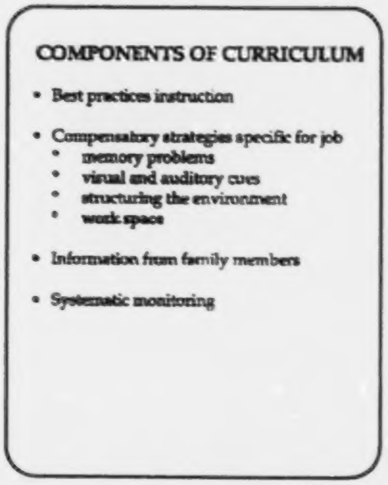
- **Medical**: the student may need to develop skills in using special equipment, monitoring and caring for medical needs, and in seeking assistance or information.
- **Speech and language**: if the student is currently receiving services in this area, determine if the program needs updating to prepare the student for transition.
- **Sensory/motor skills**: the TBI student may need help in the areas of gross and fine motor coordination which may involve physical or occupational therapy.
- **Visual/motor skills**: many TBI students struggle with visual acuity deficits, restricted fields of vision, or "blind spots." Such deficits may be dangerous in certain occupations. Determine if student requires services in this area.
- **Academic skills**: if the student has had academic deficits, further services may be needed. Special education teachers typically provide services for deficits in this area.
- **Cognitive skills**: TBI students may have limitations in terms of attention span, memory, learning new information, and organization. Such limitations may severely affect post-school success. This is another area where special education teachers may provide services.
- **Daily living skills**: banking, shopping, contacting health service providers, using public transportation, interacting with authority figures, and many other skills are included in this area. Determine if student has deficits in this area, and look to the special



CURRICULUM FOR TRANSITION

- Must be relevant, functional.
- Specific skills identified for the individual (IEP goals).
- Skills related to:
    - Academics
    - Independent living
    - Community participation
    - Employment
    - Self-determination
    - Social issues
    - Life long learning

TRANSITION
OH-9



COMPONENTS OF CURRICULUM

- Best practices instruction
- Compensatory strategies specific for job
    - memory problems
    - visual and auditory cues
    - structuring the environment
    - work space
- Information from family members
- Systematic monitoring

TRANSITION
OH-10

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education teacher and/or speech and language pathologist to provide assistance in remediation.

- **Social and emotional factors:** TBI students have specific issues related to social and emotional adjustment. In addition, they may struggle with management of stress.

CURRICULUM

TRANSITION OH-9

STATE that:

- The specific goals listed in the IEP are more readily achieved with a relevant, functional curriculum designed to teach skills identified in the assessment process.
- Successful transition is facilitated through curriculum that teaches skills specifically identified for the individual, as listed in the IEP.
- These skills are related not only to academics, but also to independent living, community participation, employment, self-determination, social issues, and lifelong learning in an integrated, community-based setting.

EMPHASIZE that if the TBI student gets a job, he/she also needs to keep it. The student needs to develop and maintain skills that are appropriate to that job.

TRANSITION OH-10

DESCRIBE "Best Practice Instruction" which is based on skill assessment and focuses on needed post-school skills:

- ° The student learns skills through direct instruction and the instructor continually collects data on student progress.

  - Instruction methods and materials are determined by the student's learning style, compensatory strategy needs, and assistive technology needs.
  - Student competency in non-academic settings is addressed.
  - Students are grouped heterogeneously and teachers rely on collaboration.
  - Logs must also be maintained, including:
    - Home contacts.
    - Employer contacts.
    - Regular education and applied technology teacher contacts.
    - Other contacts as appropriate (e.g., physical therapist).
- Compensatory strategies are used as appropriate, to teach TBI students to regain life and work skills. Such strategies may be used by teachers to assist the student to gain independence.
  - In order to compensate for memory problems, use lists. A pocket notebook or appointment book may be used, and checklists can help remind the student which activities have been completed.
  - Make use of visual and auditory cues when necessary. For example, tape-recorded messages or instructions, and use different colored containers for work materials.
  - Structure the environment. For example, sequence tasks to reduce stress by scheduling more difficult tasks first. Be aware of excessive noise or temperature in the environment as this may increase the student's stress level.

PROGRAM EVALUATION

Ongoing monitoring of

- transition goals
- curriculum
- student's progress
- student's changing interests

TRANSITION
OH-11

  - Teach the student to rearrange his/her own work space to compensate for specific deficits. For example, if the student has difficulty with the right visual field, work materials should be placed on the left. If distractibility is a concern, the student should move away from others while working.
- Family members may be able to provide assistance when dealing with compensatory strategies since they know about strategies that have been successful at home.
- The student's curriculum, as well as other components of his/her transition plan, must be systematically monitored and evaluated to determine overall effectiveness.

PROGRAM EVALUATION

TRANSITION OH-11

DISCUSS the rationale for transition program evaluation:

- Transition goals listed in the student's IEP should be reviewed and evaluated annually, to determine progress, to determine appropriateness, and to modify goals as necessary.
- In order to determine if the transition goals are being effectively addressed through curriculum, ongoing monitoring and evaluation must occur.
- The students's skill level should improve through instruction, and such improvements can be detected by continuous monitoring and frequent evaluation methods.
- It is important to note that a student's vocational

interests may change over time and with increased exposure to career options. Student interviews and interest inventories may need to be readministered or reevaluated.

STATE the importance of developing a transition packet which involves compiling documents, beginning at age 14. The packet follows the student when he/she leaves the school and includes assessment information, transition goals, a vocational tracking record, and other information on the student's strengths and weaknesses.

EMPHASIZE that:

- Young people who have experienced TBI face unique obstacles to post-school success.
- Assessing the student's strengths, weaknesses, and specific career interests provides important information when planning an effective course of transition.
- Setting specific IEP goals, providing instruction of needed skills, and allowing access to work-related experiences can bridge the gap from school to the workplace.
- Professionals involved in transition planning play a critical role in the student's success, as they must continually monitor and evaluate both student progress and the transition plan itself.
- A systematic and individualized approach to transition planning for students with TBI can help overcome many obstacles felt by these students.

UNIT 5

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UNIT 6

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RESOURCES

RESOURCES

BOOKS AND ARTICLES

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ORGANIZATIONS

Brain Injury Association, Inc., 1776 Massachusetts Avenue, NW, Suite 100, Washington DC 20036, (202) 296-2643.

TRAINING

Dr. Elaine Clark is available to conduct one-day inservice training workshops for staff working with students with traumatic injuries. Please contact Dr. Clark at the University of Utah for further information (801) 581-7968 or 581-7148.

VIDEOS

Information on these videos is available from Cheryl Hostetter at the Utah State Office of Education, 250 East 500 South, Salt Lake City UT 84111, (801) 538-7695.

All the King's Horses and All The King's Men.

Challenge of Brain Injury (A Team Perspective on Treating the Whole Person).

Community Integration of Persons with Traumatic Brain Injury.

Damage to Frontal Lobes / Role of the Neuropsychologists in Diagnosing and Treating Brain Injury: I Find Brain Injury When... / I Do Not Find Brain Injury When...

How Brain Injury Occurs / The Biomechanics of Brain Injury.

Learning Services Bear Creek — Post Acute Rehabilitation Services for Individuals With Acquired Brain Injury.

Misconceptions of Head Injury.

Post Acute Rehabilitation Services for Individual With Acquired Brain Injury.

Neurosurgeon Looks at Mild to Moderate Brain Injury / Pediatric Head Injury: Major and Subtle Differences Post Acute Rehabilitation Services for Individuals With Acquired Brain Injury.

UNIT 7

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GLOSSARY

GLOSSARY

GLOSSARY

ABSTRACT	Refers to concepts that may be difficult to understand, concepts that are theoretical or detached, dealing with things that cannot actually be seen. Some students with cognitive deficits can only understand concepts that are "concrete," or related to something tangible in the environment.
ACALCULIA	Loss of ability to do simple arithmetic.
ACTIVITIES OF DAILY LIVING (ADL)	Include dressing, feeding, hygiene, bathing, and homemaking. In a rehabilitation setting , the occupational therapist retrains the brain-injured person in self-care activities by the use of adaptive equipment or special techniques.
ACUITY	Sharpness or quality of sensation.
ADAPTIVE EQUIPMENT	Devices that allow a person to perform tasks that he/she previously could not carry out because of disability. Examples include button hooks, reaches, and stocking assists.
ADL	Activities of daily living. Routine activities carried out for personal hygiene and health (including bathing, dressing, feeding) and for operating a household.
AFFECT	The emotional state of an individual at any given time.
AFFECTIVE BEHAVIOR	The verbal and nonverbal patterns of behavior (facial expression, gestures, actions) associated with emotions such as happiness, anger, distress, surprise, and pleasure. In a brain-injured person, emotional responses are often irrelevant and may not be appropriate to the situation.
AGITATION	Excessive motor activity, which usually is nonproductive and repetitious, and is often accompanied by shouting or loud complaining. Examples of agitated behavior include an inability to sit still, pacing, and pulling at clothes or other persons. Agitation is often associated with progress in recovery following brain injury.
AGNOSIA	Loss of ability to recognize things through a particular sensory system. For example, visual agnosia refers to the inability to put together visual information so that it makes sense. The parts of an object may be seen but the student is unable to put them together as a "whole."
AGRAPHIA	Inability to express thoughts in writing.

ALERTNESS	Refers to consciousness or wakefulness.
ALEXIA	Inability to read.
AMBULATION	Walking.
AMNESIA	Lack of memory for periods of time. There are several varieties: **Anterograde Amnesia** Short-term, inability to remember events beginning at the onset of the injury; essentially severely decreases ability to learn. **Post-Traumatic Amnesia** (PTA) The period of anterograde amnesia following a head injury, the student is unable to store new information. **Retrograde Amnesia** Long-term, loss of memory for events preceeding the injury.
ANGULAR GYRUS	A convolution in the parietal lobe of the brain, important in language functions and intersensory processing.
ANOMIA	Loss of the ability to recall the names of objects. Students who have this disability often can speak fluently but have to use other words to describe objects. For example, a student may say, "It's one of those things that you hold and you move it like this" (describing a hair brush).
ANOXIA	Lack of oxygen that can cause damage to the brain. This can result when blood flow is reduced (such as when electrocution has occurred).
ANTERIOR	Of or pertaining to the front.
ANTIBIOTICS	A category of medications used to control the infections to which injured persons are prone.
ANTI-CONVULSIVE MEDICATIONS	Dilantin, Tegretol, and Phenobarbital are included. A student may be placed on such medications as a precaution against seizures, or the medication may be administered to halt a lengthy seizure.
ANXIETY	A state of physical and psychological tension characterized by motor tension (inability to relax, jitteriness, trembling), physical symptoms (sweating, pounding heart, dry mouth, upset stomach, light-headedness, dizziness, increased pulse and respiration rates), apprehensions, worry, fear, feeling of being "on the edge," difficulty in falling asleep, interrupted sleep, and difficulty in concentrating.

APATHY	A lack of interest or concern.
APHASIA	Loss of the ability to express oneself and/or to understand language. There are many different kinds of aphasia. Receptive aphasia refers to the inability to understand what someone else is saying. This is often associated with damage to the temporal area of the brain. Expressive aphasia refers to an inability to express oneself. Some students may know what they want to say but may not be able to form the words and many of the words may not "make sense." Expressive aphasia is often associated with the left frontal area of the brain.
APHONIA	Produces no sound, (movements of the mouth may be present but no sound is produced).
APRAXIA	Problems in planning, organizing, and carrying out sequential movements on command. Prevents deliberate and spontaneous execution of motion or of speech.
ARTICULATION	Movements of the tongue, lips, teeth and palate into specific patterns for purposes of speech. Also, a jointable joint.
ASPIRATION	When fluid or food enters the lungs through the wind pipe. Can cause lung infection or pneumonia.
ASTEREOGNOSIA	Inability to recognize things by touch.
ATAXIA	Loss of ability to coordinate smooth movements or steady gait. Limits control of trunk, extremities, and ability to regain balance during movement. To compensate, the patient walks with feet spread apart.
ATROPHY	A wasting away or decrease in size of a cell, tissue, organ, or part of the body caused by lack of nourishment or loss of nerve supply.
ATTENTION	The ability to focus on one subject or bit of information; being able to filter out the relevant from the irrelevant information in one's environment.
ATTENTION AROUSAL	The ability to respond consistently to sensory stimulation by eye opening, localizing, and tracking with head or eye movement. To assess a comatose patient's level of arousal one might determine if the patient brushes away a pitching hand; or, if the head turns to a voice or noise.
ATTENTION DISTRACTABILITY	Refers to the patient's inability to sustain attention because of competing internal or external stimuli. Typically, the head injury survivor has decreased ability to inhibit inappropriate responses.

AUDIOLOGIST	One who evaluates hearing defects and who aids in the rehabilitation of those who have such defects.
AUGMENTATIVE COMMUNICATION DEVICES AND SYSTEMS	An alternative communcation device for nonverbal persons or a supplemental communication device to augment whatever verbal skills a person possesses. Examples are an alphabet board on which the individual spells out messages and a computer that can type out sentences entered by the patient, who merely focuses on the letters.
AUTOMATIC BEHAVIOR	Actions that require little or no thought, effort, or planning. These actions are usually learned in childhood and are used frequently throughout life. Examples include reciting the alphabet or days of the week, tying shoelaces, and responding to social conventions (such as "How are you?"); words without much thinking on the part of the speaker. Spontaneous swearing by individuals who did not do so before their injury is an example.
AWARENESS	Conscious of stimulation arising from within or from outside the person.
AXON	A thin neuronal process that transmits action potentials away from the cell body to other neurons.
BAGGED	Use of a respirator bag to assist breathing.
BASAL GANGLIA	The islands of gray matter within each cerebral hemisphere involved in modulating and modifying motor movement.
BILATERAL	Occurring on or applying to both sides of the body.
BIOFEEDBACK	An external feedback system that allows a person to relearn how to move or relax muscles.
BLADDER PROGRAM	Since a physical disability often impairs bladder function, an indwelling ((Foley) catheter is often put in place soon after the injury to allow for bladder drainage. This indwelling catheter may be removed, and a bladder program may be established to assist the person in regaining bladder control. This program may include fluid intake restrictions, a toileting schedule, periods (intermittent) catherization, and medications.
BODY SCHEME	Refers to the knowledge of how one's body is put together and the relationships of each body part to each other. For example, a person with a body scheme disorder may not know that his/her hand is at the end of his/her arm and therefore may have trouble moving his/her hand in order to perform a functional task such as putting on a shirt or blouse.

BRAIN SCAN	An imaging technique in which a radioactive dye is injected into the blood stream and then pictures of the brain are taken to detect tumors.
BRAIN STEM	The lower portion of the brain connecting it to the spinal column. The brain stem coordinates the body's vital functions (breathing, blood pressure, and pulse). It also houses the reticular formation, which controls consciousness, drowsiness, and attention.
CARRYOVER	Refers to the ability to retain newly learned skills or information and to apply them from situation to situation. In a rehabilitation setting ,this applies to voluntarily using strategies and techniques previously performed in therapy. These strategies and techniques have been taught to assist a brain-injured person in compensating for areas of impairment.
CASE MANAGEMENT	Facilitating the access of a patient to appropriate rehabilitation and support programs, and coordination of the delivery of services. This role may involve liaison with various professionals and agencies.
CAT SCAN	A radiographic scan of the brain by projecting x-rays through the body and making a photograph on sensitive film. By scanning the brain in layers, tumors and ventricle problems can be detected.
CATHETER	A hollow tube placed into a part of the body for the removal of fluids or to allow fluids to be introduced into the body.
CEREBELLUM	The portion of the brain that is located below the cortex. The cerebellum is concerned with coordinating movements.
CEREBRAL ANEURYSM	Outpoaching of the cerebral artery. Can rupture and be fatal. Treated with surgery.
CEREBRAL ANGIOGRAPHY	An injection of dye into an artery so that the vascular system of the brain can be studied through an x-ray. Can detect aneurysms, tumors, or circulation problems.
CEREBRAL CORTEX	(See Cortex)
CEREBRAL EMBOLISM	Traveling clot to the brain.
CEREBRAL HEMORRHAGE	Rupture of a blood vessel due to hypertension or an aneurysm.
CEREBRAL THROMBOSIS	Most common—it is a clot in the artery in the brain—arteriosclerosis.

CEREBRO VASCULAR ACCIDENT (CVA)	Stroke.
CEREBROSPINAL FLUID	The fluid within the subarachnoid space, the central canal of the spinal cord, and the four ventricles of the brain. This fluid cushions the brain and the cord from shock.
CIRCUMLOCUTION	Use of other words to describe a specific word or idea which cannot be remembered.
CLOSED HEAD INJURY	Refers to a head injury in which the skull is not fractured or split.
COGNITION	Knowing, awareness, perceiving objects, thinking, remembering ideas. The learned set of rules on which all thinking is based.
COGNITIVE FLEXIBILITY	The ability to shift one's cognitive or perceptual set.
COGNITIVE REHABILITATION	Therapy programs which aid head injury survivors in the management of specific problems in thinking and perception. Skills are practiced and strategies are taught to help improve function and/or compensate for remaining deficits.
COGNITIVE RETRAINING/ REHABILITATION	Therapeutic intervention aimed at facilitating the recovery of mental skills disrupted as a result of brain injury.
COMA	Unconsciousness lasting for more than a brief period of time. A state of unconsciousness during which the person cannot be aroused and/or does not respond.
COMA ASSESSMENT	Scales which assess levels of consciousness 1. Glasgow Coma Scale (See Unit 1 - Onset Trainer's Manual.) 2. Rancho Los Amigos Cognitive Coma Scale (See Unit 1 - Onset Trainer's Manual.)
COMMUNICATIVE DISORDER	An impairment in the ability to 1) receive and/or process a symbol system, 2) represent concepts or symbol systems, and/or 3) transmit and use symbol systems. The impairment is observed in disorders of hearing, language, and/or speech processes.
COMPREHENSION	The ability to process language of varying complexity, relating that information to past experiences and acting upon it appropriately; comprehension is determined by the patient's behavior.

CONCENTRATION	Sustaining attention to a task over a period of time; remaining attentive.
CONCRETE THINKING	Difficulty in forming abstract concepts in speculating about what might be, and in grouping similar things into categories.
CONCUSSION	The common result of a blow to the head usually causing unconsciousness, either temporary or prolonged. Physiologic and/or anatomic disruption or connections between some nerve cells in the brain may occur.
CONFABULATION	Verbalization about people, places, and events with no basis of reality, may be detailed and delivered with apparent confidence by the student. This disturbance is related to the person's inability to interpret and integrate events and accompanies confusion and memory disturbances. Often these stories reflect the person's effort to make sense of the environment. Confabulation differs from lying in that the individual actually believes what he/she is reporting and is not attempting to deceive.
CONFUSION/ DISORIENTATION	The individual may talk fluently in words and phrases, which do not make sense, and what he/she says does not relate to the stimuli presented.
CONGENITAL DISABILITY	A disability that has existed since birth but is not necessarily hereditary. The term birth defect is inappropriate.
CONTRACTURE	Loss of flexibility (range of motion) in a joint due to changes in a joint, tendon, or ligament.
CONTRALATERAL	Pertaining to the side of the body opposite the reference point.
CONTRECOUP	When the brain is hit with sufficient force, causing it to "bounce" against the opposite side of the skull, thereby causing injury to both the site of impact, and the part of the brain opposite the impact. (For example, if the impact is to the left frontal area, contre-coup damage may occur to the right occipital area.)
CONTUSION	A vascular injury resulting in bruising, edema, and the hemorrhage of capillaries.
CORPUS CALLOSUM	The band of fibers which connects the two hemispheres of the brain and allows for rapid and effective inter-hemisphere communication.

CORTEX	The largest portion of the brain consisting of two cerebral hemispheres which are connected by a band of tissue (the corpus callosum). This is the area where most "thinking" and cognitive functioning takes place. It is sometimes referred to as the "cerebrum."
COUP DAMAGE	Damage to the brain at the point of impact.
CT-SCAN	A series of x-rays taken at different levels of the brain. A scan is often done soon after the injury to determine whether surgery is needed. Repeat scans are done later to see how the brain is recovering.
DENDRITES	The tree like fibers of a neuron that reach out toward other nerve cells.
DEPRESSION	A significant persistent change in mood characterized by the patient's description of his/her mood as sad, blue, hopeless, low, "down in the dumps," or irritable. Depression often is accompanied by a loss of interest or pleasure in most or all of the patient's usual activities or pastimes. A depressed individual may complain of loss of energy, feelings of inadequacy or worthlessness, and difficulty in concentrating and often expressed thoughts of suicide or death. These symptoms are often accompanied by social withdrawal, decreased effectiveness in activities, tearfulness, pessimism, and sleep disorders. Even though most individuals have a sense of what it means to feel depressed, the actual diagnosis of depression is complicated. Medical complications, medications, or environmental factors often result in symptoms that imitate those of depression.
DIFFUSE	Brain damage that covers many areas of the brain rather than one specific location. Diffuse damage is common in closed head injuries due to the brain moving about and tissue being torn, stretched, or bruised.
DILANTIN	Used to control or prevent seizures and convulsive disorders.
DIPLOPIA	Seeing two images of a single object ("double vision").
DISCRIMINATION	The ability to discern fine differences among stimuli whether visual, auditory, tactile, or other types.
DISINHIBITION	Refers to an impairment in the ability to control one's own behavior resulting in occasional or frequent displays of socially inappropriate behavior, decreased impulse control, and difficulty in the control of emotions.
DISORGANIZED SYNTAX	Use of words in incorrect order. (Cat out don't forget the to put.)

DISORIENTATION	Not knowing where you are, who you are, or the time. Often professionals use the term "oriented in all three spheres" or "oriented times three," which refers to person, place, and time.
DORSAL	Toward the back.
DRESSINGS	Protective coverings for wounds.
DYSARTHRIA	Difficulty with pronunciation due to weakness or poor coordination of muscles of the lips, tongue, and jaw. Speech may sound slurred, slowed, distorted, weak, and nasal. Speech content is unaffected.
DYSCALCULIA	Inability to perform simple arithmetical calculations (lesion located in left parietal lobe in the area of the angular gyrus).
DYSGRAPHIA	Impaired ability to write not due to motor impairment also referred to as "agraphia," which is technically a total inability to write.
DYSLEXIA	Impaired ability to read.
DYSPHAGIA	A swallowing disorder characterized by difficulty in oral preparation for the swallow, or in moving material from the mouth to the stomach. This definition also includes problems in positioning food in the mouth.
EDEMA	Collection of fluid in the brain tissue causing swelling.
ELECTRO CEPHALOGRAPHY (EEG)	A test that measures the electrical activity of the brain.
ELECTRO ENCEPHALOGRAM (EMG)	An insertion of electrodes into muscles and surface of skin to study their electrical activity and see if the nerves react to the needles. It is painful to the patient. Helps diagnose Myasthenia Gravis, a disease of great muscle weakness in which there is a lack of acetycholine—a transmitter.
EMBOLISM	The sudden blocking of an artery or a vein by a blood clot, bubble of air, deposit of oil or fat, or small mass of cells deposited by the blood flow.
EMOTIONAL LABILITY	Exhibiting rapid and drastic changes in emotions quickly becoming angry, sad, silly, or happy; and being extreme in showing these emotions.

ENCEPHALOGRAPHY	Non-invasive use of ultrasound waves to record echoes from brain tissue. Used to detect hematoma, tumor, or ventricle problems.
EPILEPSY	A group of neurological disorders characterized by recurrent episodes of convulsive seizures, abnormal behavior, loss of consciousness, sensory disturbances, or all of the above.
EQUIPMENT (ASSISTIVE DEVICES)	Devices needed to increase independence. Examples include braces, wheelchairs, bathroom equipment, and walking aids. Such equipment is individually designed to meet a particular patient's needs.
EUPHORIA	An exaggerated feeling of well-being; mild elation.
EVOKED CEREBRAL RESPONSE TEST	A test to measure the brain's response time to a visual, auditory, or tactile (somatosensory) stimulus. Also called evoked potential.
EX (EXERCISE)	This usually denotes a mat program used for physical therapy. Time also may be spent doing advanced transfer training, family teaching, and equipment evaluation.
EXECUTIVE FUNCTIONS	Planning, prioritizing, sequencing, self-monitoring, self-correcting, inhibiting, controlling, or altering behavior.
FIGURE GROUND	Differentiation between the foreground and the background of a scene; this refers to all sensory systems including vision, hearing and touch.
FLACCIDITY	Lack of muscle tone, resulting in inability to perform movement.
FLAT AFFECT	Little variation in emotional expression.
FOLEY CATHETER	An indwelling catheter used to provide drainage of urine when bladder function is impaired.
FRONTAL LOBE	The area of the brain located at the front on both the left and right sides. This area plays a role in controlling emotions, motivation, social skills, expressive language (in an area on the left side referred to as "Broaca's" area), and inhibition on impulses. The motor strip controlling movement and motor integration runs along the posterior (back) of the frontal lobe.
FRUSTRATION TOLERANCE	The ability to deal with frustrating events in daily life, the point at which a student can no longer control his anger in a situation and responds by yelling, throwing things or becoming aggressive.

FUNCTIONAL	Refers to the ability to accomplish a task using any means available, e.g., adaptive equipment and compensation techniques.
GASTRONOMY TUBE	A tube inserted through a surgical opening into the stomach. It is used to introduce liquids, food or medication into the stomach when the patient is unable to take these substances by mouth. (Also known as a gastrointestinal tube, GI Tube)
GLASGOW COMA SCALE	A scale of severity of injury developed by B. Jennett, MD, and G. Teasdale , MD. This scale relates the level of consciousness with three factors: motor responses, eye opening, and verbal response.
GLASGOW OUTCOME SCALE	A system for classifying the outcome of head injury survivors. The categories range from "good recovery" in which the patient appears to regain the pre-injury level of social and career activity; "moderate disability" in which the patient does not regain the former level of activity but is completely independent with respect to the activities of daily living; "severe disability" is defined as the state wherein the conscious communicating patient is still dependent on the help of others. The original scale has eight outcome categories. This scale relates to functional independence and not residual defits.
GLIAL CELLS	Supportive cells of the central nervous system.
GOAL DIRECTED PURPOSEFUL BEHAVIOR	Actions directed toward the accomplishment of specific objectives or the fulfillment of intention or desire. Such behavior appears to be organized, controlled and efficient.
HALDOL	Used to calm agitated, combative, anxious, or tense patients, usually during the relatively early stages of post-acute treatment.
HALO	A metal ring used with patients who have spinal cord injuries to preserve proper alignment of the neck and spinal cord. This helps keep the patient still and the body aligned during healing.
HEAD-INJURED	A person who has a definite history of a blow to the head, a laceration of the scalp or forehead, and/or altered consciousness, no matter how brief. This excludes facial injuries, fractures of the lower jaw, and foreign bodies in the eye, nose or ear, unless they are associated with one of the "head injury" features.

HEAD INJURY, CLOSED	Occurs when the head collides with another object (for example the windshield of a car) and brain tissue is damaged, not by the presence of a foreign object within the brain, but by violent smashing, stretching, and twisting of brain tissue. Closed head injuries cause diffuse tissue damage that results in disabilities which are generalized and highly variable.
HEAD INJURY PENETRATING	Occurs when an object (for example a bullet or an ice pick) fractures the skull, enters the Brian and rips the soft brain tissue in its path. Penetrating injuries tend to damage relatively localized areas of the brain which result in fairly discrete predictable disabilities.
HEAD INJURY TRAUMATIC	Damage to living tissue caused by an external, mechanical force. It is usually characterized by a period of altered consciousness (amnesia or coma) that can be very brief (minutes) or exceedingly long (months/indefinitely). Also called TBI.
HEMATOMA	The collection of blood in tissues or a space following a rupture of a blood vessel. Epidural- Outside the brain and its fibrous coverings, but under the skull. Subdural- Between the brain and its fibrous coverings. Intracerebral- In the brain tissue.
HEMIANOPSIA	Visual field cut. Blindness for one half of the field of vision. This is not the right or left eye, but the right or left half of vision in each eye.
HEMIPARESIS	Weakness of one side of the body. Motor weakness of one side of body. Limits movement of arm, face or leg.
HEMIPLEGIA	Paralysis of one side of the body as a result of injured neurons carrying signals to muscles from the motor areas of the brain. Motor paralysis of one side of body. Inhibits movement of arm, face or leg.
HEMISPHERIC ASYMMETRY	Differences in the types of functions for which the two sides of the brain are responsible. (For example, the left side is usually associated with spinal abilities.)
HEMORRHAGE	Bleeding that occurs following trauma. Bleeding may occur within the brain when blood vessels in the skull or the brain are damaged.
HOYER LIFT	Equipment used to transfer a person safely to and from the bed to a wheelchair and vice versa.
HYDROCEPHALUS	Excess accumulation of cerebrospinal fluid, causing increased intracranial pressure.

HYDROTHERAPY	Treatment using water as a means of promoting relaxation and healing, increasing flexibility, and decreasing pain. Such treatments may involve the use of a variety of water tanks, including Hubbard tanks, walking tanks, whirlpools, and lowboys.
HYPERTONICITY	The quality or state of having excessive muscle tone, increased resistance of muscle to passive stretching.
HYPOTHALAMUS	A portion of the diencephalon of the brain it activates, controls, and integrates functions such as body temperature, sleep and appetite.
HYPOTONICITY	Low muscle tone of trunk or extremities. Prevents initiation of balanced muscle contraction for stability.
HYPOXIA	A decrease in the oxygen supply to tissues.
IMPULSIVITY	A behavioral trait, common following head injury, in which the individual acts or speaks without first considering the consequences. Also called impulse control. May include reckless acts without consideration of the consequences because social judgment and planning abilities are impaired.
INDEPENDENT LIVING	Community-based to maximize a person's ability to be empowered and self-directed; allows an individual to live in his home with maximum personal control over how services are delivered, combined with the opportunity to work as much as possible.
INFARCTION	An area of necrosis (dead or dying tissue) resulting from an obstruction of the blood vessels normally supplying that area.
INFLEXIBILITY	The inability to adjust to everyday changes in routines, usually related to injury to the frontal lobes. Some students with head injuries may have little difficulty following a structured routine but may exhibit sudden frustration and confusion when their routine is changed.
INITIATIVE	Refers to the individual's ability to begin a series of behaviors directed toward a goal.
INSIGHT REGARDING IMPAIRMENT	The extent to which an individual accurately judges one's own strengths and weaknesses.
INTERMEDIATE CARE FACILITY	The facility providing personal care to individuals who demonstrate an intermediate degree of physical or social dependency. Minimal medical nursing care is provided. The emphasis is on a structured supportive care system with minimal physical assistance in meeting daily living needs.

INTRACEREBRAL	Refers to the inside of the brain itself.
INTRACRANIAL	Refers to the cavity inside the skull that contains the brain.
INTRACRANIAL PRESSURE (ICP)	The exertion of force within the brain by intracellular fluids capable of causing distortion or displacement of cerebral structures or a reduction of cerebral blood flow.
IRREVERENT SPEECH	Statements that make sense but don't have anything to do with the conversation.
ISCHEMIA	A severe reduction in the supply of blood to body tissues.
ISOLATION	Precautions taken to protect injured persons and others, usually from the spread of infection.
JARGON	Words that are not real words and have no meaning or words that are close to the word the student means to say.
JUDGMENT	The process of forming an opinion, based on an evaluation of the situation at hand. "Good" judgment refers to choosing the optimal available course. Judgment involves cognitive skills, personal values and preferences, and insight into an individual's abilities and disabilities. For example, a student with judgment deficits may be able to make decisions, but the decisions may be unsafe or unsuccessful.
KINESTHESIA	The sensory awareness of body parts as they move.
LABILITY	State of having notable shifts in emotional state (e.g. uncontrolled laughing or crying).
LANGUAGE	Usually refers to the ability to enter new information into long term memory; any means of expression or communicating thoughts and feelings; can include hand gestures and facial expression as well as speech, writing, and the ability to use numbers. Language also refers to the structure (grammar) and meaning (semantics) of thoughts and feelings and their expression. A brain injury or stroke may disrupt thought processes and result in confusion or disturbed language expression.
LESION	Any visible local abnormality of the tissues of the body; any damage to the nervous system.
LIMBIC SYSTEM	A set of structures (usually considered part of the temporal lobe) that plays an important role in memory, attention, emotions, and behavior.

LOCKED-IN SYNDROME	A condition resulting from interruption of motor pathways in the ventral pons, usually by infarction. This disconnection of the motor cells in the spinal cord from controlling signals issued by the brain leaves the patient completely paralyzed and mute, but able to receive and understand sensory stimuli; communication may be possible by code using blinking, or movements of the jaws or eyes, all of which are spared.
LOG BOOK	A diary-like listing of the individuals daily activities which can be used to help remember what happened during the course of a day, names of persons with whom contact occurs, and the order in which events occurred.
MAGNETIC RESONANCE IMAGING (MRI)	A diagnostic technique that uses nonionizing forms of energy to produce sectional images of the brain.
MANUAL DEXTERITY	The ability to coordinate one's hands to accomplish basic specific tasks, e.g., typing and dialing a phone.
MEMORY	The process of perceiving information, organizing and storing it, and retrieving it at a later time as needed. Memory is a complex function that involves many parts of the brain working together. These are different "types" of memory, including immediate (repeating a phone number), recent (recalling what occurred the previous day), and remote (recalling the name of a childhood friend). **Delayed recall** Recall of material after a delay, often with intervening material being introduced to prevent active rehearsal. **Episodic Memory** Memory for continuing events in a person's life more easily impaired than Semitic memory, perhaps because rehearsal or repetition tends to be minimal. **Intermediate Recall** Immediate repetition of information given by the examiner. **Learning** Acquisition of new information determined by the extent to which an individual benefits from repetition, rehearsal or practice. **Long Term Memory** More permanent storage of the memory tracing events that have occurred prior to an injury. For example, previous employment, family members, and residential history represent long term memory events. This type of past information is typically partially or wholly preserved in many brain injured individuals.

	Nonverbal Memory Memory for figures, spatial relationships; assumed to be based in the deep structures of the right temporal lobe.
	Registration A very brief sensory memory function by which information enters the memory system; it is then entered into short term memory or decays and is lost; very resistant to impairment.
	Short Term Memory Working memory with a limited capacity; the ability to remember momentary events. Its contents are in conscious awareness; lasts 30 seconds to several minutes. Short term memory loss may range from occasional forgetting of names to a total loss of memory for events after only a few minutes. Short term memory problems are the most common memory impairments exhibited by brain injured persons.
	Verbal Memory Memory for verbal information assumed to reflect functioning of the deep structures of the temporal lobe.
MEMORY AUDIO VISUAL	Auditory memory is the ability to recall a series of numbers, lists of words, sentences, or paragraphs presented orally.
MONITOR	Any machine that gives a reading of vital body processes such as cardiac (heart) monitors or intracranial pressure monitors.
MOTOR CONTROLS	The ability to selectively contract or relax a muscle or group of muscles at will.
MOTOR CORTEX	The portion of the cortex that appears associated with motor functions.
MOTOR STRIP	The area of the cortex that extends between the frontal lobes and the anterior parietal lobe, where it overlaps the sensory areas.
MUSCLE TONE	The amount of tension (continuous contraction) in a muscle at rest. The quality or quantity of muscle tone affects the efficiency of voluntary muscle contraction. For example, when a person has low muscle tone, his endurance will be less and he will react less to a given stimulus. Therapy for abnormal muscle tone is designed to normalize tone by either decreasing spasticity (high muscle tone) to facilitate movement or, in the case of low muscle tone, improving tone to allow more ease of movement.

MYELOGRAPHY	A medical test involving injection of dye into the spinal subarachnoid space so that an x-ray of the spinal cord can be taken.
MYSOLINE	An antiseizure medication often used if other similar-acting drugs fail to work.
NASO- GASRTIC TUBE (N-G TUBE)	A clear plastic tube inserted through a nostril into the stomach; used for feeding and draining stomach contents.
NATIONAL HEAD INJURY FOUNDATION (NHIF)	An organization of families and professionals concerned with the needs of individuals with traumatic brain injury. The organization provides information and support and has chapters in many states.
NEUROLOGICAL IMPAIRMENT	Impairment of the neurological (nervous) system.
NEURON	The basic nerve cell of the nervous system containing a nucleus within a cell body. Sensory neurons transmit nerve impulses to the spinal cord and the brain. Motor neurons transmit impulses from the brain to the muscles. All neurons have at least one axon and one or more dendrites.
NEUROPATHOLOGY	The pathology of the nervous system.
NEURO-PSYCHOLOGICAL EVALUATION	An assessment using psychological tests, interviews, and behavioral observation to determine a person's cognitive, emotional, and behavioral state, with emphasis on deficiencies of intellect, personality, and behavior as outcomes of brain injury. Such assessment attempts to determine brain-behavior relationships, location of injuries, and brain systems involved.
NEURO-PSYCHOLOGIST	A psychologist concerned with evaluating (by tests) brain/behavior relationships, planning training programs to help the patient's brain return to normal functioning, and recommending alternative cognitive strategies to minimize the effects of head injury.
NEURO-PSYCHOLOGY	The branch of psychology that looks at the damage site of the brain injured individual and identifies the impact on cognitive and behavioral function.
NEURO TRANSMITTERS	Any one of numerous chemicals that modify or result in the transmission of nerve impulses between synapses.
NONVERBAL	No verbal communication.

NYSTAGMUS	Involuntary horizontal, vertical or rotary movement of the eyeballs.
OCCIPITAL LOBE	The upper middle lobe of each side of the brain involved in perceiving and understanding sensations and closely linked to speech fluency and writing.
OCCUPATIONAL THERAPIST	Evaluates the patient's upper extremity functioning, fine motor skills, eye-hand coordination, perceptual skills and cognitive functioning in relation to those every day skills needed for independent living.
OPEN HEAD INJURY	Refers to a head injury in which there is an open wound where the skin is damaged or penetrated.
ORGANIC PERSONALITY SYNDROME	A change in personality marked by impaired judgment and a loss of control over emotions, impulses, and behavior. "Organic" personality changes result from a specific physical cause (e.g., brain injury). A person with organic personality syndrome may exhibit sudden temper outbursts, sudden crying spells, apathy, indifference, loss of initiative, suspiciousness, and anxiety, as well as other behavioral or emotional difficulties.
ORIENTATION	Reality - bases information about the world, e.g., who one is, where one is, whom one is talking to, and what day it is.
ORTHOSIS	Splint or brace designed to improve function or provide stability.
OYSARTHRIA	Lack of control over automatic oral actions such as chewing, swallowing and speech. May effect phonation, feeding or respiration.
PARALYSIS	Neurologic muscular weakness or dysfunction to the extent of immobility.
PARAPHASIA	Substitution of sounds syllables or words. i.e., common slips of the tongue.
PARAPLEGIA	Paralysis of the legs (from the waist down).
PARIETAL LOBE	The upper middle lobe of each side of the brain involved in perceiving and understanding sensations and closely linked to speech fluency and writing. Left - Damage to this area may disrupt a patient's ability to understand spoken and/or written language. Right - Damage to this area can cause visuo-spatial deficits (patients may have difficulty finding their way around new places).

PERCEPTION	Integration of sensory impressions into psychologically meaningful data.
PERSEVERATION	Becoming "stuck" on one word or task and not being able to switch back and forth or go on to the next word/task. (For example, a student may be asked to draw a circle on a piece of paper. He may then be asked to draw a square, but instead continues drawing circles.)
PHENOBARBITAL	Used to control or prevent seizures and convulsive disorders.
PHYSIATRIST	A physician who specializes in physical medicine and rehabilitation.
PHYSICAL THERAPIST	Evaluates components of movement, including muscle strength, muscle tone, posture, coordination, endurance and general mobility.
PLATEAU	A temporary or permanent leveling off in the recovery process.
POSEY	A safety harness used to prevent falls.
POSITIONING	Placing a person in a position such that muscle and joint flexibility is preserved and skin breakdown is prevented. Positioning is especially important for persons with the potential for contractures or limited mobility. A variety of positions are needed for each individual A person's position must be changed at prescribed intervals to obtain maximal benefit.
POST-CONCUSSIONAL POSTERIOR	Of or pertaining to the back of a structure.
POST-TRAUMA AMNESIA (PTA)	A loss of memory occurring immediately after injury that may continue for weeks or months. During this time many students are unable to organize or retrieve information. The length of PTA is regarded as an indicator of eventual recovery.
PRECOCIOUS PUBERTY	Exceptionally early occurrence of puberty.
PREMORBID	Prior to the onset of illness or injury.
PRESERVATION	Repetition of a behavior or train of thought beyond its usefulness.

PRIMARY SOMATO SENSORY	The area of cortex that relates to the skin senses of touch, pressure, pain, etc., as well as the body senses of joint position, muscle tension or visceral state.
PROBLEM SOLVING	The ability to evaluate all of the factors involved when faced with a problem, and to generate and evaluate possible solutions. Students with deficits in this area may "freeze" when faced with a problem, that is they may not be able to think of possible solutions and instead respond by doing nothing.
PROGNOSIS	The prospect as to recovery from a disease or injury as indicated by the nature and symptoms of the case.
PROXIMAL INSTABILITY	Impaired strength or muscle tone of the trunk, shoulder girdle or hip girdle. It can cause poor posture; abnormal movement of the limbs, inability to sit up and inability to hold one's head up. It is caused by damage to the motor strip of the brain.
PROSTHESIS	An artificial substitute for a missing body part, such as an arm or leg, eye or tooth, used for functional or cosmetic reasons.
PSYCHOSOCIAL SKILLS	Refers to the individual's adjustment to the injury and resulting disability, and one's ability to relate to others. Includes feelings about self, sexuality and resulting behaviors.
PTOSIS	Drooping of a body part, such as the upper eyelid, from paralysis, or drooping of visceral organs from weakness of the abdominal muscles.
QUADRIPARESIS	A weakness that involves all four limbs; also called quadriplegia.
RANGE OF MOTION	Exercises specifically directed to movement of joints that may atrophy from disuse.
RANGE OF MOTION2	**Active Range of Motion** The amount of motion at a given joint achieved by a person using his own muscle strength to move the joint.
RANGE OF MOTION3	**Passive Range of Motion** The amount of motion at a given joint when the joint is moved by another person or by another functioning limb of a brain injured person.
REHABILITATION	Comprehensive program to reduce/overcome deficits following injury or illness, and to assist the individual to attain the optimal level of mental and physical ability.

RIGIDITY	Resistance to movement in any range. Prevents active movements and good positioning.
SCOTOMA	Area of blindness of varying size anywhere within the visual fields.
SECONDARY INSULTS	Secondary or delayed brain injury; includes all events other than the mechanical injury sustained at the time of impact.
SEIZURE, SEIZURE DISORDER	A disturbance in the electrical-chemical activity of the brain due to nerve cell damage or electrolyte imbalance. After a brain injury, scar tissue in the brain may lead to reduced seizure tolerance (also know as a seizure disorder or post-traumatic epilepsy). Seizures are usually common during the first two years after injury and usually decrease in frequency as time goes on. Alcohol consumption by a seizure-prone person can increase his risk of having a seizure.
SELECTIVE ATTENTION	Ability to focus on the most important aspects of a situation without becoming distracted.
SELF-ESTEEM	Self-respect; confidence in oneself.
SELF- MONITORING	Awareness of one's behavior and that accuracy or appropriateness of one's performance; usually automatic and continuing.
SENSATION	Feeling stimuli which activate sensory organs of the body, such as touch, temperature, pressure and pain. Also seeing, hearing, smelling and tasting.
SENSORY INTEGRATION	Interaction of two or more sensory processes in a manner which enhances the adaptiveness of the brain.
SEQUELAE	The pathological sequences that follow a traumatic injury.
SEQUENCE SKILLS	The ability to order elements correctly may be motor (sequencing body movements smoothly) or linguistic (sequencing words appropriately into sentences) or may involve keeping track of the correct order of stimuli.
SHEARING	The type of brain lesion often seen as a result of an abrupt deceleration in movement which causes a continuation of brain movement within the skull; tears in nerve fibers.
SOCIAL ASSESSMENT	A social assessment includes general background data, description of family or other support group resources—including emotional, financial and environmental resources, their availability to the patient, and the patient's position and role in the family (child, parent, spouse)—and educational and employment history.

SPASMS	Involuntary muscle contractions resulting from excessive muscle tone caused by an interruption of controlling impulses in the brain and spinal cord.
SPASTICITY	An involuntary increase in muscle tone (tension) that occurs following injury to the brain or spinal cord, causing the muscles to resist being moved. Characteristics may include increase in deep tendon reflexes, resistance to passive stretch clasp knife phenomenon and clonus.
SPEECH	Oral expression of language.
SPONTANEOUS MOVEMENT	A reaction resulting from a natural impulse without obvious planning or premeditation.
SPONTANEOUS RECOVERY	The recovery that takes place spontaneously as the brain heals; this type of recovery occurs with or without rehabilitation, and it is often difficult to know how much improvement is spontaneous and how much is due to rehabilitative interventions. It occurs early in the recovery process.
SUCTION MACHINE	Used to remove secretions from oral or nasal passages.
SUPPORTED EMPLOYMENT	Competitive work in integrated work setting for individuals with severe handicaps for whom competitive employment has not traditionally occurred, or for who competitive employment has been interrupted or intermittent as a result of severe disability.
TACTILE DEFENSIVENESS	Being overly sensitive to touch; withdrawing, crying, yelling, or striking out when touched.
TANGENTIAL EXPRESSIONS	Speech rambles on and on while moving further and further from the original point.
TEAM CONFERENCE (STAFFING)	A periodic meeting of a patient's rehabilitation team. At the team conference the patient's progress, rehabilitation goals, and estimated length of stay are discussed and documented. Families are periodically contacted by either the patient's program manager or his psychologist to discuss details of the topics discussed at these conferences.
TEMPORAL LOBE	The lower middle part of each side of the brain involved in receiving information from the auditory system and involved in memory.

THIRD PARTY FUNDING	Reimbursement for services rendered to a person in which an entity other than the recipient of the services is responsible for payments, (i.e., an insurance company).
TILT TABLE	A table that has the capacity to raise and lower a person from the horizontal to the vertical position and vice versa. It is used to stretch heel cords or to increase standing tolerance in those who have not been in an upright position for an extended period of time.
TRANSITIONAL LIVING	Training for living in a setting of greater independence typical length of stay 4-18 months.
TRAUMA	Injury or wound to the body.
TRAUMATIC BRAIN INJURY (TBI)	A brain injury from any blow to the head (with or without skull fracture), penetrating head wounds, compound fractures.
TRUNK	The region of the body from the shoulder to the pelvis.
TRUNK CONTROL	The ability of a person to maintain proper alignment of the head, neck, and pelvis; to bring the trunk back into alignment after displacement and to move the trunk at will (for example, to twist).
TUBE FEEDING	Nutritional feedings administered through a gastostomy tube (a permanent or semipermanent tube be placed in the stomach) or a nasogastric tube (a permanent or semipermanent tube placed in the pharynx or esophagus) when swallowing is impaired.
UNILATERAL	Pertaining only to one side.
UNILATERAL NEGLECT	Not responding to things on one side. This usually occurs on the side opposite from the location of the injury (right side brain injury, neglect left side). Some students only exhibit this when both sides of the body are being touched at once. In extreme cases, the student may not bathe, dress or acknowledge one side of the body.
VENTRICLES	Four cavities in the brain that are filled with cerebrospinal fluid serving as a cushion when the brain is impacted. These cavities may enlarge when brain tissue is damaged.
VERBAL APRAXIA	Impaired control of proper sequencing of muscles used in speech (tongue, lips, jaw muscles, vocal cord).

VESTIBULAR	Pertaining to the vestibular system in the middle ear and the brain which senses movements of the head. Disorder can lead to dizziness, poor regulation of postural muscle tone and inability to detect quick movements of the head.
VISUAL FIELD DEFICIT	Not visually perceiving information in a specific area of the visual field. Often this involves either the left or the right half of the visual field, but may involve a quarter of the visual field, etc.
VISUAL MOTOR SKILLS	Ability to synchronize vision with the movements of the body or body parts; e.g., copying from a printed page.
VOCATIONAL COUNSELING	The process of assisting the disabled person to understand his vocational assets and liabilities and of providing occupational information to help him choose an occupation suitable for his interests and abilities.
VOIDING	Urinating.
WHITE MATTER	Area of the nervous system rich in axons (an axon is the part of a neuron that sends information), the conducting portion of the brain and spinal cord.

LIST OF COMMON ACRONYMS FOR SECTION 504, IDEA, AND AMERICANS WITH DISABILITIES

ADA — Americans With Disabilities Act

ADD — Attention Deficit Disorder

ADHD — Attention Deficit Hyperactive Disorder

ADL — Activities of Daily Living

AG — Annual Goal

ALS — Advanced Life Support

AP — Accommodation Plan

BLS — Basic Life Support

CD — Cognitive Delay

CFR — Code of Federal Regulations

CHAPTER 1–Disabled — A part of Chapter 1 of Title 1 of ESEA, provides financial assistance to SEAs and eligible agencies to deliver supplemental services to students. (Formerly known as Public Law 89.313).

CHI — Closed Head Injury

CNS — Central Nervous System

D — Deaf

DD — Developmental Disabilities

DON — Determination of Need

DRG — Diagnostically Related Groups

ED — Emotionally Disturbed

EMT — Emergency Medical Treatment

ESY — Extended School Year

FAPE — Free Appropriate Public Education required by the Individuals with Disabilities Education Act (IDEA)

FERPA — Family Educational Rights and Privacy Act

HI — Hearing Impaired

ICD — International Code of Diseases

ICF — Intermediate Care Facility

ICFMR — Intermediate Care Facility for Mental Retardation

IDEA — Individuals With Disabilities Education Act

IEP — Individualized Education Plan

IFSP — Individualized Family Service Plan

LD — Learning Disability

LEA — Local Education Agency (school district)

LRE — Least Restrictive Environment

LTCF — Long-Term Care Facility

OCR — Office of Civil Rights

OHI — Other Health Impaired

OT/PT — Occupational Therapy/Physical Therapy

PLOP — Present Level of Performance

PTA — Post-Traumatic Amnesia

PVS — Persistent Vegetative State

SEA — State Education Agency

SED — Severe Emotional Disturbance

SECTION 504 — A part of the Rehabilitation Act of 1973 making it illegal for any organization receiving federal funds to discriminate against a person solely on the basis of disability.

STO — Short Term Objective

TBI — Traumatic Brain Injury

VI — Visually Impaired

WISC-R — Weschler Intelligence Scale for Children - Revised

Participant's Packet

TRAUMATIC BRAIN INJURY

TRAINING MANUAL FOR SCHOOL PERSONNEL

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UNIT 1

ONSET OF TRAUMATIC BRAIN INJURY

OBJECTIVES FOR ONSET

1. Define Traumatic Brain Injury (TBI), including eligibility requirements.
2. Give epidemiological data.
3. Describe the neuropathology of TBI.
4. Describe basic neuroanatomy and functional problems related to damage at specific locations.
5. Describe neuropsychological deficits commonly associated with TBI.
6. Describe stages of recovery following TBI.
7. Describe hospitalization and assessment.

ONSET OH-1

TRAUMATIC BRAIN INJURY DEFINITION

"Traumatic brain injury" (TBI) means an **acquired injury** to the brain caused by an **external physical force**, resulting in total or partial **functional disability** or **psychosocial impairment**, or both, that **adversely affects a child's educational performance**. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgement; problem-solving; sensory; perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does NOT apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Definition from Federal Register/Vol. 57, No. 189, pg. 44802

ONSET OH-2

UTAH ELIGIBILITY REQUIREMENTS

- Head Trauma
- Infections
- Strokes
- Anoxic Injury
- Tumors
- Toxic Exposure

UTAH ELIGIBILITY REQUIREMENTS

Defining Traumatic Brain Injury

IDEA (Individuals with Disabilities Educational Act) addressed the disabilities caused by traumatic brain injury. The proposed definition of traumatic brain injury includes children with brain injuries caused by external physical force or by an internal occurrence such as stroke or aneurysm, with resulting impairments that adversely affect educational performance. The term includes children with open or closed head injuries but does not include children with brain injuries that are congenital or degenerative or caused by birth trauma.

The Proposed Section 300.5(12) Reads:

"Traumatic brain injury" means an injury to the brain caused by an external physical force or by an internal occurrence such as stroke or aneurysm, resulting in total or partial functional disability or psychosocial maladjustment that adversely affects educational performance. The term includes open or closed head injuries resulting in mild, moderate, or severe impairments in one or more areas, including cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not include brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

The Definition on the Iowa Census Form:

Traumatic brain injuries are injuries that occur some time after birth. Injuries of this type must be differentiated from those that are congenital (present at birth) since the resulting impairments are expressed differently and should be treated differently.

Traumatic Brain Injuries: An acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a student's educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Eligibility Requirements Adopted By Utah State Office Of Education

Eligibility criteria: to be eligible for special education and related services, a Traumatic Brain Injury may be caused by one or more of the following:

- Traumas from accidents, falls, assaults and surgical procedures.
- Infections (e.g., meningitis, encephalitis).
- Strokes and other vascular accidents.
- Anoxic injuries caused by a reduction in the oxygen supply to the brain from anesthetic accidents, cardiac arrest, choking, and near drowning.
- Tumors of the brain.
- Toxic exposure (e.g., lead and chemical poisoning).

Diagnosis: It is important to remember that only a physician can diagnose brain injury; therefore, any evaluation should begin with a medical diagnosis. Although other evaluations could be considered, the following are recommended:

- Vision.
- Health care records/medication.
- Augmentative communication needs.
- Hearing.
- Rehabilitative team evaluations.
- Self-help/Adaptive behavior.
- Academic.
- Speech/Language.
- Social/Emotional.
- Intellectual/Cognitive.
- Career - Vocational (secondary students).
- Gross/Fine motor skills.

Eligibility: Eligibility is determined by a multi-disciplinary team.

Testing: Because of the dynamic nature of traumatic brain injury, it is recommended that the testing format include informal assessment and diagnostic teaching to compliment final testing. It is important to consider the student's pre-injury learning style and knowledge base. Previous history becomes a baseline to compare pre-injury skills with post-injury performance.

Note: The above information is included in the Utah Guidelines and Procedures for Serving Students with Traumatic Brain Injuries.

Other disabling conditions: The student is not identified as manifesting a primary disabling condition other than TBI (Traumatic Brain Injury).

Excerpts From: USOE GUIDELINES for Serving Students with Traumatic Brain Injury from the section titled Special Education.

Referral and Evaluation

If a special education referral is deemed appropriate, the school principal or staff member will complete a referral and arrange for an evaluation with the school special education coordinator. Parental consent will be obtained prior to conducting the initial evaluation, and required prior notice and provision of parents' rights will be followed.

If a referral for a special education evaluation is made, the school special education coordinator or designee will arrange a multi-disciplinary evaluation team meeting to determine if the student with a traumatic brain injury qualifies under the IDEA/Utah State Office of Education classification rules for special education.

A comprehensive evaluation will be conducted to answer questions relevant to the student's educational needs. These questions should direct the design of the comprehensive evaluation. Although other evaluations could be considered, the following are recommended:

- Vision.
- Hearing.
- Health care records.
- Rehabilitative team evaluations.
- Augmentative communication.
- Self-help/Adaptive behavior.
- Academic.
- Intellectual/Cognitive.
- Speech-Language.
- Career-Vocational (secondary students).
- Social-Emotional.
- Gross motor skills.
- Fine motor skills.

Because of the dynamic nature of traumatic brain injury, it is recommended that the evaluation format include informal assessment and diagnostic teaching to complement formal testing. One characteristic of many students with traumatic brain injury is that they tend to regain previously learned material but remain deficient in learning new knowledge and concepts. Thus, it is important to consider the student's pre-injury learning style and knowledge base. Previous history becomes a baseline to compare pre-injury skills with post-injury performance.

"The purpose of evaluation is to find the point at which learning breaks down, since that is the point at which teaching should begin. The scores of psychological and academic evaluations administered to students with head injuries must be interpreted differently from scores of other students. These test results reflect only that the students with head injuries could perform the task demanded by the specific test items; they do not predict future performance." (Cohen, Rhodes, Welkes, and Ylviskaer, 1985)

It is important to remember that only a physician can diagnose brain injury, therefore, any evaluation should begin with the medical diagnosis.

A well developed and thought out assessment is of foremost importance to the successful reintegration of the student with traumatic brain injury. Telzrow (1991) suggested that such an assessment accomplishes several objectives, including:

1. Establishing baseline levels and patterns of performance to monitor future recovery.
2. Describing the student's functioning in critical areas to assist in educational planning.
3. Providing a means of evaluating recovery of functioning and monitoring the effectiveness of interventions.

AN EVALUATION COULD CONSIST OF THE FOLLOWING INFORMATION AND AREAS

a. Medical Diagnosis of Brain Injury - A written diagnosis from a doctor that the student has a traumatic brain injury. This is a requirement to receive special education services.

b. Cognitive and Information Processing Strengths and Deficits - Measurement of intellectual processes such as perception, memory, thinking, judgment and reasoning.

c. Behavior/Emotional Status - Evaluation of a student's behavior and the effects the behaviors have on educational performances.

d. Adaptive Skills - Evaluation of the extent the student is able to interact effectively and appropriately with the environment.

e. Speech and Language Abilities - Evaluation of articulation and verbal/written language skills. The speech/language therapist working in the school should be qualified to assess a number of cognitive/linguistic functions of the student with traumatic brain injury.

f. Fine and Gross Motor Skills - An evaluation to determine the physical strengths and weaknesses of the student.

g. Academic Functioning - It is important to remember that current academic performance is not a valid prediction of future academic success for students with traumatic brain injury. Conducting formal and informal evaluation and comparing those with pre-injury academic records will provide a pre-post comparison. This will also establish a baseline for future measurements.

h. Neuropsychological Evaluation - The school district should request a copy of the neuropsychological report from the health care professionals and/or parents. This assessment would include a physical description of the injury and up-to-date medical status.

i. Ongoing Evaluation

The nature of traumatic brain injury is one of change and unpredictability, hence the annual or triennial evaluation is sometimes inadequate for this condition. The student should be constantly monitored. As teachers interact with the student daily, they will be required to reconvene an IEP team in order to reassess goals and/or objectives frequently.

Listed below are recommended testing conditions for evaluating students with traumatic brain injury (Savage, 1988):

- A controlled and/or distraction-free environment, which may help compensate for the student's attentional deficits.
- The use of short tests and relatively brief testing sessions which may help compensate for reduced endurance, persistence, and attention span.

- Very clear test instructions and examples which may help compensate for reduced task orientation and impaired flexibility in shifting from task to task.
- Highly structured tasks, which may help compensate for reduced initiation and spontaneous problem solving.
- An encouraging interactive style of a skilled examiner which may help compensate for the student's inability to cope with interpersonal or situation stress.

It is important to remember that all formal evaluations be interpreted within the framework of the actual environment in which the student has functioned and will function in the future. A criterion-based evaluation of the student should include assessing his/her performance in *the following settings:

- In a large (5 or more) structured group.
- In a large unstructured group.
- In a small (less than 5) structured group.
- In one-to-one planned teaching settings.
- In one-to-one incidental teaching settings.

The multi-disciplinary team determines whether the student has a disability requiring special education services. Typically students who are considered eligible under the category of traumatic brain injury will have one or more of the following eligibility characteristics:

- The student has suffered a sudden onset of impairment due to direct brain trauma (e.g., skull fracture, Cerebral Vascular Accident (CVA), contusions, and/or bullet wounds, etc.).
- The student has suffered a slow change in cognitive abilities due to change in medical status (tumor, and/or encephalitis, etc.).
- The students has suffered an anoxic insult to brain (cardiac arrest, and/or near drowning, etc.).

In order to qualify and be eligible for services under the category of traumatic brain injury, the above condition(s) need to adversely affect educational performance and require special education services.

It is important to keep in mind that before TBI became a category under the Individuals with Disabilities Act, many students with traumatic brain injury were classified under a variety of special education classifications. The IEP Team should review these cases to determine if a change of eligibility classification is warranted.

INCIDENCE

- For all ages, more than 2 million head injuries occur each year.
- For children and adolescents, annual estimates of head injuries are about 1 million.
- About 165,000 children will be hospitalized, with 16,000-20,000 serious enough to cause lasting effects.
- Almost twice as many males as females.
- Head injuries are the leading cause of death and disability in children.

ONSET OH-4

MAJOR CAUSES OF HEAD INJURY IN CHILDREN

Infants

- Accidental Dropping
- Physical Abuse

Toddlers

- Falls
- Vehicular Accidents
- Physical Abuse

Preschoolers

- Serious Falls
- Vehicular Accidents
- Physical Abuse

ONSET OH-5

MAJOR CAUSES (continued)

Elementary School Children

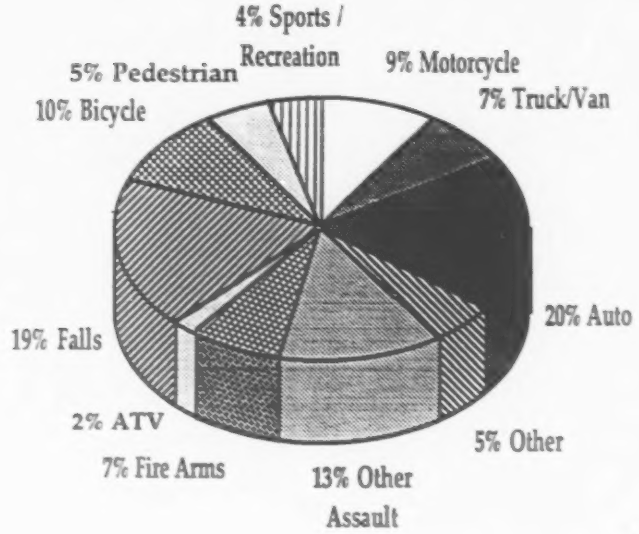
- Vehicular Accidents
- Bicycle Accidents
- Falls
- Injuries During Recreational Activities

Adolescents

- Vehicular Accidents
- Sports Injuries
- Assault

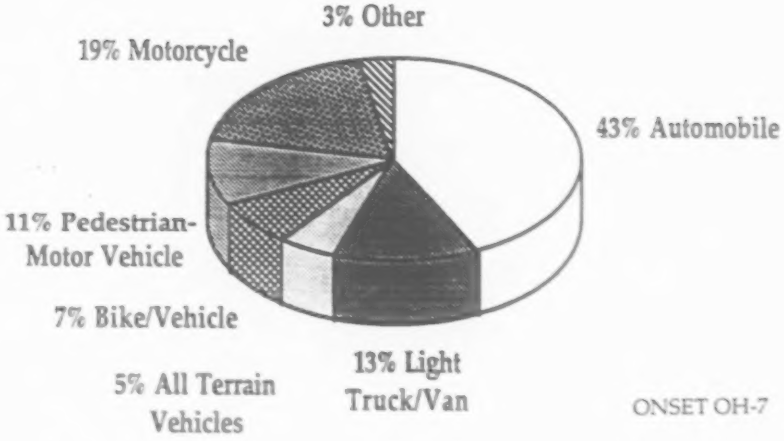
ONSET OH-6

TRAUMATIC BRAIN INJURIES BY CAUSE



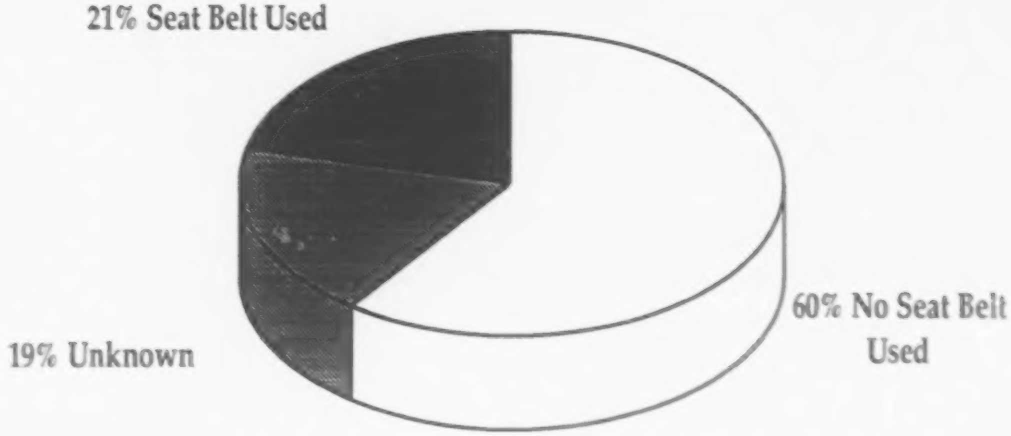
ONSET OH-8

MOTOR VEHICLE RELATED INJURIES



ONSET OH-7

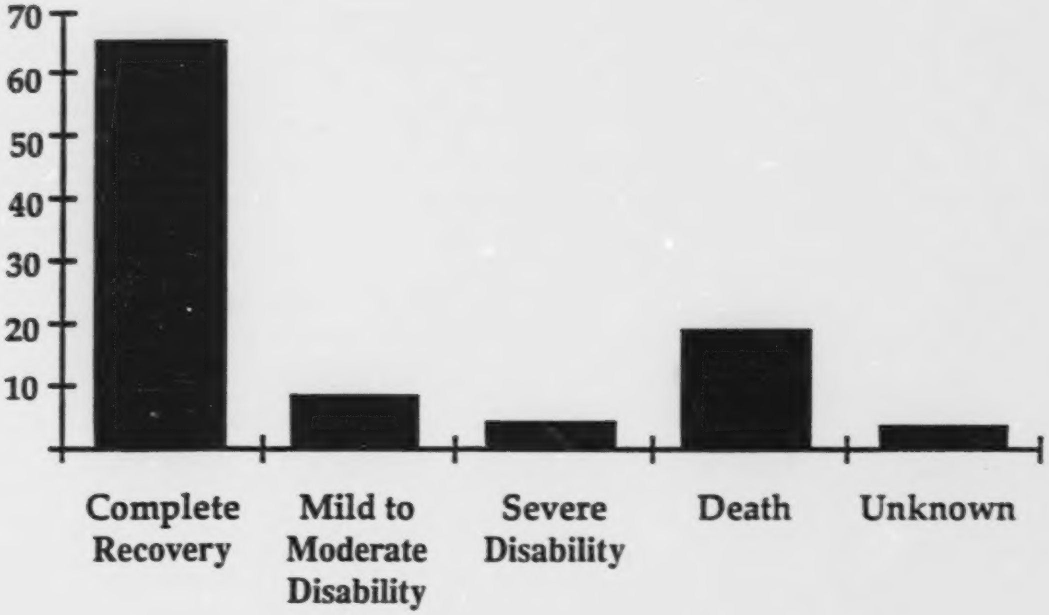
SAFETY BELT USAGE IN AUTO AND TRUCK CRASHES



ONSET OH-9

SEVERITY OF NEUROLOGICAL IMPAIRMENT

on Discharge from Acute Care (Utah)



ONSET OH-9b

SEVERITY OF HEAD INJURY

Mild:

- Brief or no loss of consciousness
- Shows signs of concussion
    - Nausea and Vomiting
    - Headache
    - Fatigue
    - Dizziness
    - Poor Memory
- Post-traumatic amnesia less than 1 hour

Moderate:

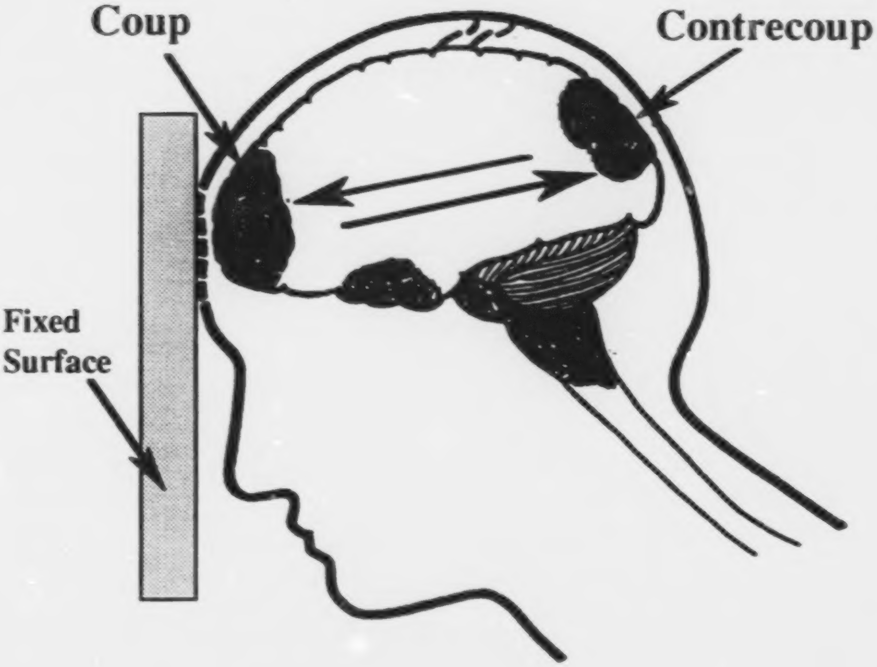
- Coma less than 24 hours
- Neurologic signs of brain trauma
    - Skull fracture with contusion
    - Hemorrhage
- Focal findings on CT or EEG
- Post-traumatic amnesia 1-24 hours

Severe:

- Coma more than 24 hours
- Post-traumatic amnesia more than 1 day

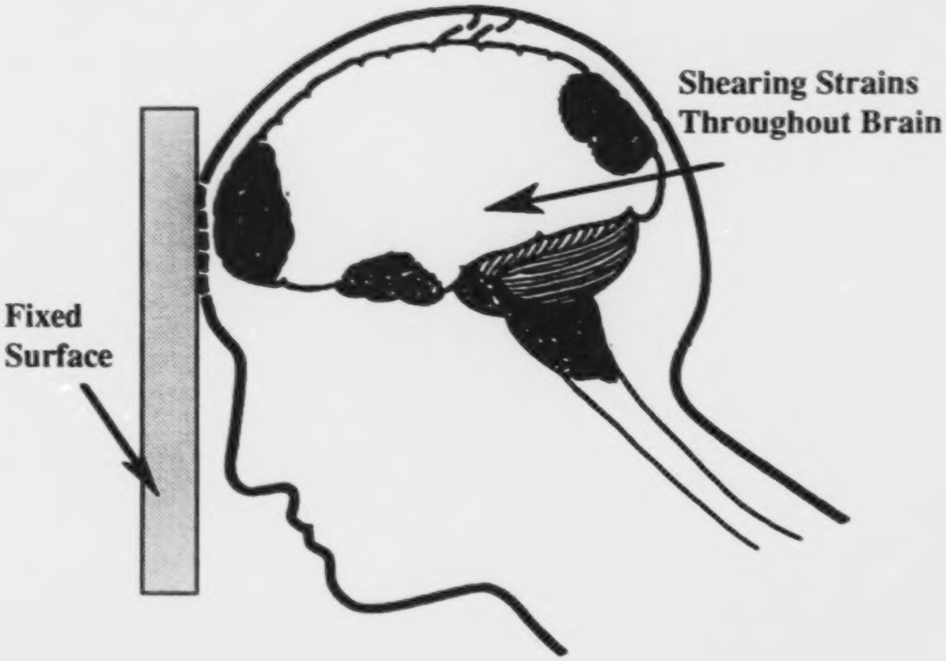
ONSET OH-9c

BRAIN DAMAGE CAUSED BY CLOSED HEAD INJURY


Coup
Contrecoup
Fixed Surface

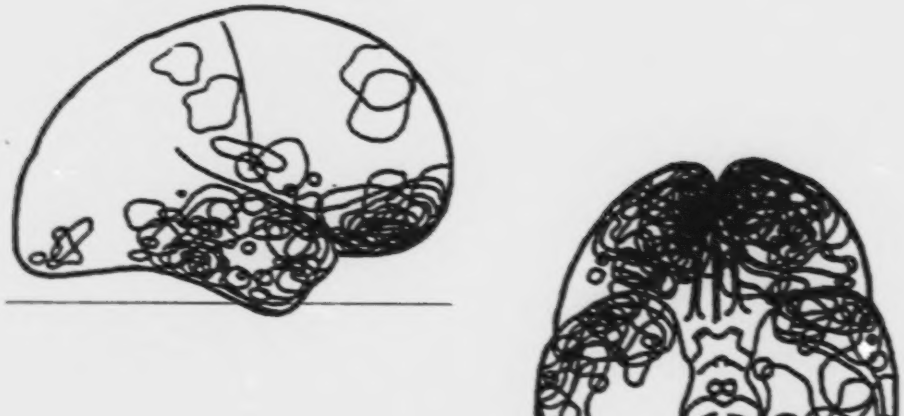
ONSET OH-10

BRAIN DAMAGE CAUSED BY CLOSED HEAD INJURY


Shearing Strains
Throughout Brain
Fixed
Surface

ONSET OH-11

TYPICAL LOCATIONS OF CONTUSIONS



OTHER EFFECTS OF HEAD TRAUMA

- **Edema** is a term for brain swelling resulting from the increase and collection of fluid around the damaged brain tissue.

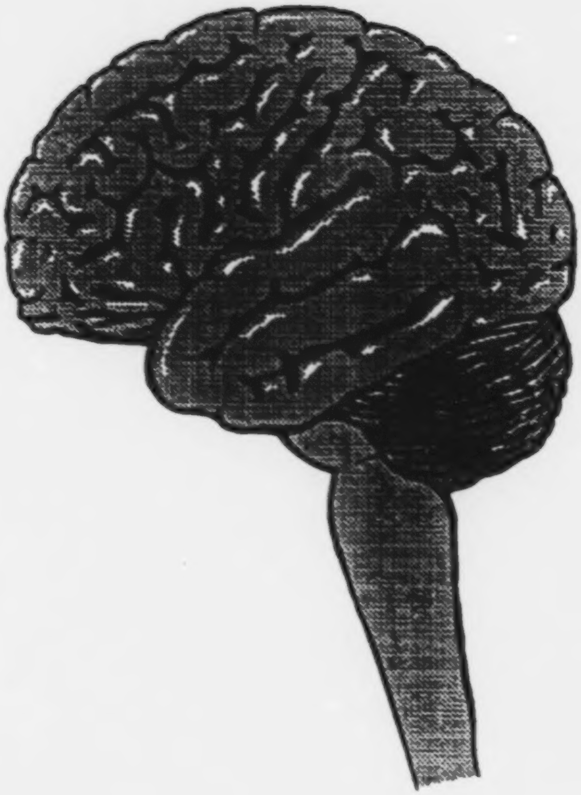
- **Increased intracranial pressure** is a build-up of pressure inside the skull.

- **Hemorrhage** occurs as blood flows within the skull. A clotting or mass of blood is called a hematoma.

- **Infarction** is death of tissue due to reduced blood flow.

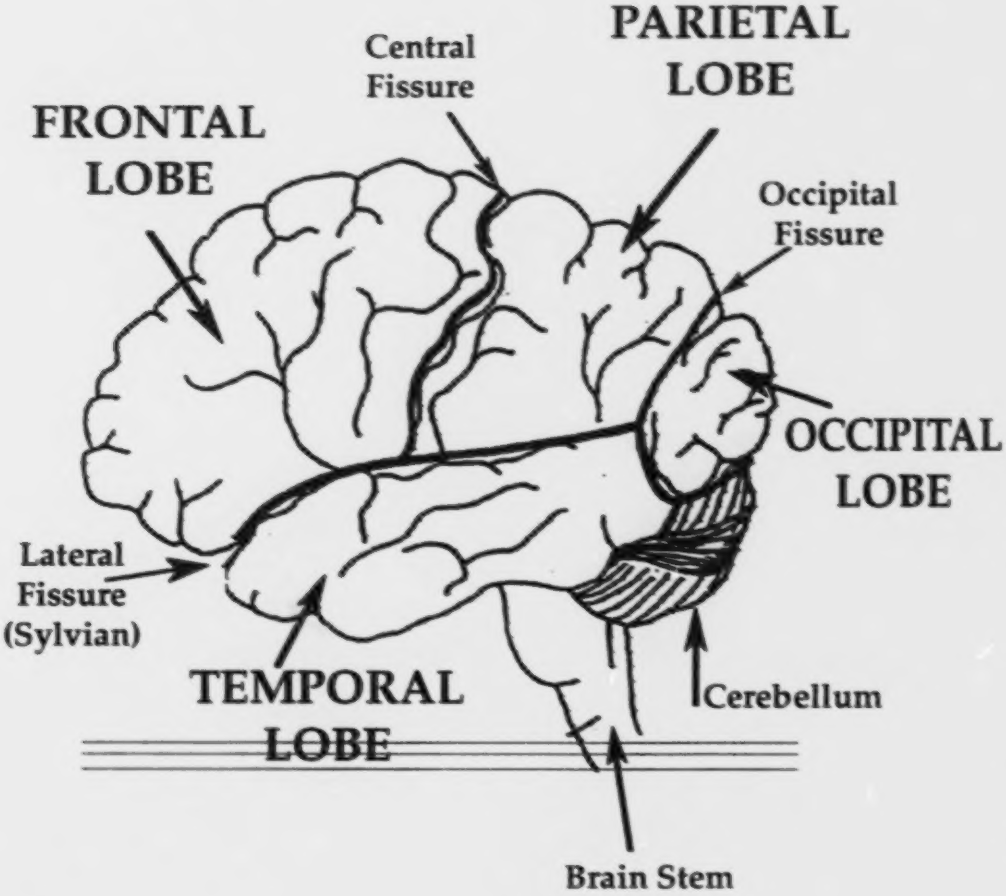
- **Infection** is more common in patients who have received a skull fracture.

ONSET OH-12b



ONSET OH-13a

LOBES/REGIONS OF THE BRAIN


PARIETAL LOBE
Central Fissure
FRONTAL LOBE
Occipital Fissure
OCCIPITAL LOBE
Lateral Fissure (Sylvian)
TEMPORAL LOBE
Cerebellum
Brain Stem

ONSET OH-13b

POTENTIAL FRONTAL LOBE DEFICITS

- Disturbances of motor function.
- Inability to shift mental sets (perseveration).
- Poor planning and organizational skills.
- Impaired problem solving.
- Impaired divergent thinking.
- Impaired memory for temporal order.
- Impaired ability to read external cues.
- Attention disturbances and impulsivity.
- Impaired social behavior and effective changes (personality/depression).
- Problems with initiation/inhibition.

ONSET OH-14

POTENTIAL OCCIPITAL LOBE DEFICITS

- Blind spots in the visual field
- Visual agnosia or visual distortions
- Cortical blindness

ONSET OH-15

POTENTIAL PARIETAL LOBE DEFICITS

- Inability to comprehend spoken language.
- Writing disabilities.
- Distortions of body image.
- Contralateral neglect — neglect of;
    - Visual.
    - Auditory.
    - Somatosensory stimulation.
- Inability to recognize musical tunes.
- Loss of ability to recognize faces.

ONSET OH-16

POTENTIAL TEMPORAL LOBE DEFICITS

- Poor long-term memory.
- Disturbance of language comprehension.
- Disturbance of auditory and olfactory. perception.
- Disturbance of visual perception.
- Impaired organization.
- Personality changes.
- Changes in sexual behavior.

ONSET OH-17

POTENTIAL BRAIN STEM DEFICITS

- Altered Consciousness.
- Difficulty Breathing.
- Vision Problems.
- Hearing Problems.
- Changes in Sense of Smell.

ONSET OH-18

POTENTIAL CEREBELLAR DEFICITS

- Disruptions in posture and walking.
- Weakness.
- Tendency to fatigue.
- Deficits in the control of the extremities.
- Eye movement problems (nystagmus).
- Deficits assessing distances.

ONSET OH-19

OTHER NEUROANATOMICAL SITES

- Limbic System
- Motor Strip
- Sensory Strip

ONSET OH-20

POST-CONCUSSIONAL SYMPTOMS

- Headache
- Fatigue
- Dizziness
- Sleep Disturbance
- Memory

ONSET OH-21

MOTOR SEQUELAE FOLLOWING TBI

- **Hemiplegia:** Motor paralysis of one side of body.
- **Hemiparesis:** Motor weakness of one side of body.
- **Ataxia:** Loss of ability to coordinate smooth movements or steady gait.
- **Hypotonicity:** Low muscle tone of trunk or limbs.
- **Rigidity:** Resistance to movement in any range.
- **Spasticity:** Inappropriate sustained contraction of muscles.
- **Tremors:** Involuntary movements from contractions of opposing muscles.

ONSET OH-22

OTHER MEDICAL PROBLEMS

- Seizures
- Visual Impairment
- Hearing Difficulties
- Endocrine Disturbances
- Precocious Puberty
- Diabetes Incipitus

ONSET OH-23

COGNITIVE SEQUELAE

- Attentional Difficulties
- Memory Problems
- Intelligence
- Achievement
- Reasoning and Problem Solving
- Organizational Skills
- Language Deficits
- Processing of Information
- Visual-Motor and Visual-Perceptual Skills

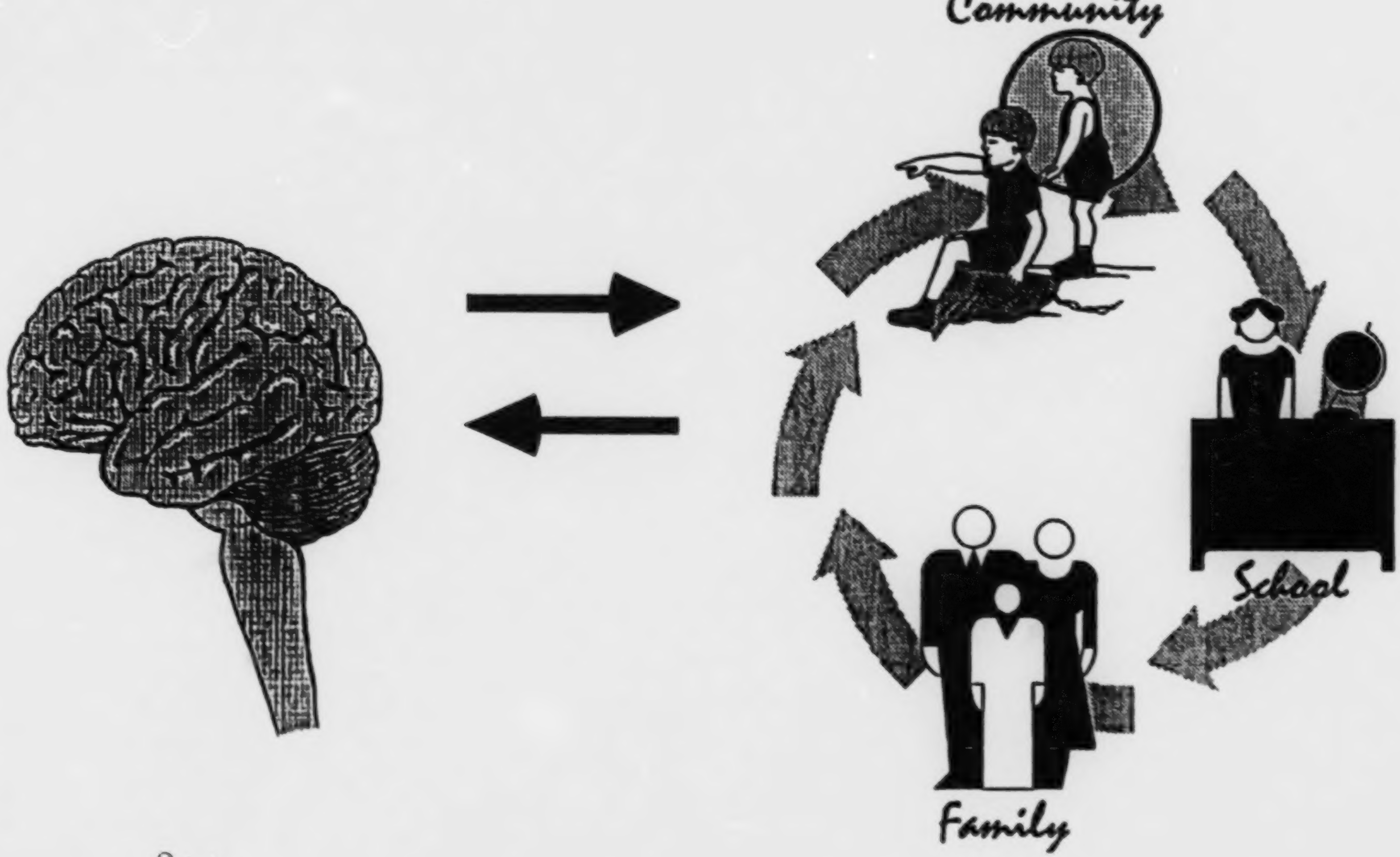
ONSET OH-24

BEHAVIORAL SEQUELAE

- Impulsivity
- Aggression
- Emotional Lability
- Agitation
- Disinhibition
- Poor Social Functioning
- Self-Esteem
- Motivation
- Awareness of Deficits
- Anger
- Depression

ONSET OH-25

RECIPROCAL INTERACTION


Community
School
Family

FACTORS IN RECOVERY

- Age
- Site of injury
- Degree of damage (and cause)
- Premorbid characteristics
- Family support

ONSET OH-26b

RANCHOS LOS AMIGOS
STAGES/LEVELS OF COGNITIVE FUNCTIONING

Early

Level I **No Response**
Coma, unresponsive to any stimulus.

Level II **Generalized Response**
Non-purposeful, limited, inconsistent, often to pain only.

Level III **Localized Response**
Reacts specifically but inconsistently to stimuli.

Middle

Level IV **Confused/Agitated**
Excessive irritation, problems with short-term memory and selective attention.

Level V **Confused/ Inappropriate, Non-agitated**
Appears alert, responds to simple commands, performs self-help, inability to focus, distractible.

Level VI **Confused/ Appropriate**
Long-term memory improving, goal-directed behavior.

Late

Level VII **Automatic - Appropriate**
Increased awareness of self and environment, poor judgment and problem-solving skills.

Level VIII **Purposeful and Appropriate**
Alert, oriented, carryover for new learning, may continue with decreased reasoning ability.

LABORATORY PROCEDURES

- Computerized Tomography(CT)
- Magnetic Resonance Imaging (MRI)
- Single-Photon Emission Computed Tomography (SPECT)
- Positron Emission Tomography (PET)
- Electoencephalography (EEG)

UNIT 2

THE RE-ENTRY PROCESS

OBJECTIVES FOR RE-ENTRY

1. Identify the key concepts of re-entry for TBI students.
2. Describe the TBI team and its functions.
3. Identify the issues for assessing TBI students for re-entry.
4. Describe the process and issues for the development of the Individualized Education Plan (IEP).
5. Identify the effects of TBI on the family and peers.
6. Describe considerations for placement and placement options for TBI students.
7. Identify important factors in the relationship between expectations and developmental stages.

RE-ENTRY OH-1

KEY CONCEPTS FOR RE-ENTRY

- Schools are the key service providers.
- Initiate services early.
- Services are ongoing and must meet the changing needs of the student.
- Personnel must monitor, document, and evaluate.
- Flexibility.
- Rehabilitation Act, Section 504.
- Individuals with Disabilities Educational Act (IDEA).

RE-ENTRY OH-2

Major Legislative Principles of the Federal Right to Education

1. **Zero Reject** • Access to free education must be provided for all children and youth regardless of degree of exceptionality or fiscal impact on the school system.

2. **Least Restrictive Environment** • Education should be provided in the least restrictive, most normal setting possible that is consistent with the learning needs of the student.

3. **Appropriateness** • Education must be based on an individualized program that is appropriate to the needs of the child.

4. **Due Process** • Opportunity must be available for a notice or a hearing appeal with respect to placement or other changes in educational programs.

RE-ENTRY: Legislative Principles
Based on RE-ENTRY OH-3

SCHOOL RE-ENTRY TEAM

- Case Manager.
- Parent (s).
- Student.
- Classroom and/or Special Education Teacher (s).
- Counselor.
- School Psychologist.
- Administrator.
- Medical Personnel (initially).
- Therapists.
- Others as needed.

RE-ENTRY OH-4

GOALS OF THE TEAM APPROACH

- Collaboration.
- Communication.
- Parental involvement.
- Timely delivery of services.
- Creative use of appropriate strategies.
- Progressive functional and process-oriented instruction.
- Address student's **current** level.
- Routine probing.
- Community resources.
- Frequent reassessment.
- Assessment of compensatory and educational strategies.

RE-ENTRY OH-5

ELEMENTS IN THE ASSESSMENT PROCESS

- Review prior school records.
- Obtain reports from parents.
- Review reports from treatment facility/therapists.
- Informally observe/interview student.

INFORMATION NEEDED BY RE-ENTRY TEAM

- Medical status.
- Medical management (e.g., seizure control).
- Physical limitation including hearing and vision.
- Motor skills.
- Cognitive recovery.
- Needed assistive devices.
- Continuing rehabilitation needs.
- Behavior patterns.
- Communication skills.

RE-ENTRY OH-7

SAMPLE TEST INSTRUMENTS USED IN NEUROPSYCHOLOGIC ASSESSMENT

Batteries: Halstead-Reitan Neuropsychological Battery and Luria-Nebraska Neuropsychological Battery.

Intelligence: Wechsler Intelligence Scales (WISC-III, WAIS-R, WPPSI-R), Kaufman Assessment Battery for Children, McCarthy Scales of Children's Abilities, Differential Abilities Scale

Achievement: Woodcock-Johnson Achievement Tests, Wechsler and Kaufman Achievement Scales, Gray Oral Reading Tests, Woodcock Reading Mastery Test, Key Math

Language: Clinical Evaluation of Language Fundamentals-Revised, Peabody Picture Vocabulary Test, Aphasia Screening Test, Token Test, Verbal Fluency Tests, TOLD, TOWL, Preschool Language Scale-Revised

Memory: Wide Range Assessment of Memory and Learning, Wechsler Memory Scale-Revised, Denman Neuropsychological Memory Battery, Tests of Memory and Learning, California Verbal Learning Test, Rey Osterrieth Complex Figure Test, Tactual Performance Test

Attention: Continuous Performance Test, Stroop Color and Word Test, Conners' Questionnaires (parent and teacher), Attentional Deficit Disorders Evaluation Scale

Mental Flexibility and Concept Formation: Category Test Stroop Color and Word Test, Wisconsin Card Sorting Test

Visual Functions: Rey Osterrieth Complex Figure, Motor-Free Visual Perception Test, Trail Making Test, Bender Gestalt Tests of Visual Motor Integration, Raven's Progressive Matrices

Motor Functions: Finger Tapping Test, Grooved Pegboard Test, Purdue Pegboard Test, Grip Strength, Bruininks-Osteretsky Test for Motor Proficiency, Tactual Performance Test

Social and Adaptive Behavior: Achenbach Child Behavior Checklists (parent, teacher and youth forms), Vineland Adaptive Behavior Scales, Scales of Independent Behavior, AAMD Adaptive Behavior Scales (school and parent version), Hawaii Early Learning Profile

Personality: MMPI-A, Personality Inventory for Children-Revised.

COMPARISON:
TBI/LD POPULATION

Similarities:

1. Learning problems, but normal IQ.

2. Uneven cognitive/academic profile.

3. Deficits after injury:
    - Attention.
    - Functional organization.
    - Perceptual functioning.
    - Processing efficiency.
    - Organized problem solving.
    - Strategic planning.
    - Impulse control.
    - Social appropriateness.

4. May profit from:
    - Task analysis.
    - Multisensory approach.
    - Teaching to strength.
    - Compensatory strategies.
    - Focus on metacognitions.

RE-ENTRY OH-8

COMPARISON : TB/LD (cont.)

Differences:

1. Varied profile.
2. Greater confusion, disorientation, and lack of control.
3. Often relatively good reacquisition of curriculum skills.
4. Interference of previously successful learning style.
5. Different set of emotional and self-image issues.
6. Unpredictable progress based on neurologic recovery.

COMPARISON: TBI/BD POPULATION

Similarities:

1. Problems with interpersonal relationships.
2. Inappropriate behaviors.
3. Problems with cause and effect.
4. Difficulty picking up social cues.

Differences:

1. Sudden onset.
2. Results from damage and stress related to injury.
3. Behavior often affected by impairment.
4. Different response to traditional behavioral strategies.

RE-ENTRY OH-10

COMPARISON: TBI/ID POPULATIONS

Similarities:

1. Severe learning impairment (by definition).

Differences:

1. Varied profile due to uneven return of pre-trauma skills.

2. Better prognosis based on neurologic recovery and relearning.

3. Social/emotional status/needs based on pre-trauma functioning.

4. Placement in a developmental disabilities setting may be counter productive.

RE-ENTRY OH-11

TYPICAL IEP INCLUSIONS

- Specific service provisions.
- Specific educational and related services to be provided.
- Projected amount of each service instruction and duration of services.
- Evaluation procedures to measure/monitor progress.
- The extent to which the student will participate in regular classroom programs.
- The schedule to monitor progress.

RE-ENTRY OH-12

PROGRAMMING CONSIDERATIONS

- Ways the student learns best.
- Curricula.
- Direct retraining.
- Ancillary services needed.
- Frequent review of services.
- Smaller student/teacher ratio.
- Strict behavioral programming.
- Compensatory strategies.

RE-ENTRY OH-13

EXAMPLES OF COMPENSATORY STRATEGIES FOR COGNITIVE IMPAIRMENTS

Attention and Concentration

A. *External Aids*
   1. Use a timer or alarm watch to focus attention for a specific period.
   2. Organize the work environment to minimize or eliminate distractions.
   3. Use a written or pictorial task plan with built in rest periods and reinforcement; move marker along to show progress.
   4. Place a symbol or a picture card in an obvious place in the work area to remind the student to maintain attention.

B. *Internal Procedures*
   1. Set increasing demands and goals for self, including sustained work time.
   2. Self-instruct (e.g., "Am I Wandering? What am I supposed to do?"). (Written cue cards may initially be needed for training period.)

Orientation (Time, Place, Person, and Event)

A. *External Aids*
   1. Use a log or journal book or tape recorder to record significant information and events of the day.
   2. Refer to pictures of persons who are not readily identified (keep with log book).
   3. Use appointment book or daily schedule sheet.
   4. Use alarm watch that is set for regular appointments.
   5. Refer to maps or pictures for special orientation; make maps with important landmarks.

B. *Internal Procedures*
   1. Select anchor points or events during the week and then attempt to reconstruct previous or subsequent events in time.
   2. Request time, date, and similar information from others when necessary.
   3. Scan environment for landmarks.

Input Control (Amount, Duration, Complexity, Rate, and Interference)

A. *Auditory*
   1. Give feedback to speaker. ("Please slow down; speed up; break information up into smaller chunks.")
   2. Request repetition in another form ("Would you write that down?").

B. *Visual*
   1. Request longer viewing time or repeated viewing; extra reading time.
   2. Cover parts of a page and look at exposed areas systematically.
   3. Use finger or index card to assist scanning and to maintain pace.
   4. Use symbol to mark right and left margins of written material on top and bottom segments as anchors in space.

Ylvisaker, M (1985). Editor. Head Injury Rehabilitation: Children and Adolescents. San Diego: College Hill Press

5. Use large print books or talking books.
6. Request a verbal description.
7. Remove an object from its setting and examine it, then return it and examine it again.
8. Place items in best visual field and eliminate distractors.
9. Turn head to compensate for field cut.

Comprehension and Memory Processes

1. Use self questions (e.g., "Do I understand? Do I need to ask a question? How is this meaningful to me?"). Periodically look for gaps, misconception, or confusion by summarizing or explaining and checking back with speaker, a written source, or reference material.
2. Build 'frames' or background for new information that is of particular significance or interest. Read summaries, general textbooks, and ask knowledgeable persons about topics of interest.
3. Use a study guide for extended discourse material (survey, question, read, recite, review).
4. Make charts and graphs of important relationships in textual material.
5. Use external memory aids (tape recorder, log book, notes).
6. Rehearse convert or overt; auditory-vocal, or pantomime.
7. Utilize mnemonics.
8. Use diagrams or forms that facilitate deeper encoding of material and its subsequent retrieval.
9. Relate the information to personal life experiences and current knowledge. Use semantic knowledge of basic scripts (going to restaurant, buying groceries) to help reconstruct events.
10. Project and describe a situation in which targeted material will be needed.
11. At retrieval, reconstruct environment in which information was received.
12. Verbalize visual-spatial information. Visualize verbal information in graphs, pictures, cartoons, or action-based imagery.
13. Keep items in a designated place.

Word Retrieval

1. Search lexical memory according to categories and sub-categories.
2. Describe the concept; circumlocute freely (talk about or around it).
3. Use gestures or signs.
4. Attempt to generate a sentence or use a carrier phrase.
5. Search letters or sounds of the alphabet (more effective in retrieving members of a limited category such as names).
6. Describe perceptual attributes and semantic features of the concept.
7. Draw the item.
8. Attempt to write the word.

9. Create an image of the object in a scene; then attempt to describe the scene.
10. Attempt to retrieve the overlearned opposite.
11. Free association with the image in mind.
12. Associate person's name with physical characteristics or a known person of the same name.

Thought Organization and Verbal Expression

1. Use a structured thinking procedure.
2. Use knowledge of scripts to generate real or imagined descriptions of experiences (narratives).
3. Construct a time line to maintain appropriate sequence of events.
4. Note the topic in any conversation; self-question about the main point of expression; alert others before shifting topic abruptly.
5. Watch others for feedback as to whether your words are confusing. Watch facial expressions and so forth, or directly ask listeners, "Am I being clear?"
6. Rehearse important comments or questions and listen to self.
7. Set limits of time or allowable number of sentences in any one turn.

Reasoning, Problem Solving, Judgment

1. Use a problem- solving guide.
2. Use self-questioning for alternatives or consequences.
3. Look at possible solutions from at least two different perspectives.
4. Scan the environment for cues as to appropriateness or inappropriateness of a behavior.
5. Set specific times or places for behaviors that are appropriate in specific occasions.
6. Actively envision situations to which successful procedures can be generalized.

Self Monitoring

1. Use symbols or signs, places in obvious places, or alarms that mean: "pause" or "stop" or "Am I doing what I should be doing?".
2. Use a book or notebook with cards inserted at selected places with self-monitoring cues.
3. Pair specific self instruction with the associated emotion (e.g, "Calm down" when angry).

Task Organization

1. Use a task organization checklist: materials, sequenced steps, time line, evaluation of results. Check each when completed.
2. Prepare work space and assign space as task demands.

EFFECTIVE MANAGEMENT OF THE BRAIN INJURED CHILD IN THE SCHOOL SETTING

Elaine S. Pollock

CLASSROOM STRATEGIES:

1. Recognize student's present level of functioning. Adjust your expectations to take into account the child's deficits and disabilities. For example, if the student has a short attention span, don't expect him/her to concentrate on one task for a long period.
2. Provide a non-stressful climate with adequate emotional warmth and physical contact from the teacher and, when possible, from the peer group.
3. Help the child to develop an organizational system (i.e., this is where your books go, this is where your notebooks go, this is where you can find a pencil, etc.).
4. Structure the classroom environment as much as possible. Be sure the brain injured child understands your expectations. List classroom rules and consequences somewhere in the classroom. Repeat rules and consequences frequently.
5. Place the brain injured child next to students who won't provoke him and close to the teacher's desk. Provide peer tutor or adult tutor nearby.
6. Try to remove unnecessary environmental distractions such as background noise and unneeded pencils, books, and papers from the student's desk.
7. Use student's strongest learning modality.
8. Break assignments into small steps.
9. Gradually increase the length and difficulty of tasks. Remove time limits on tests.
10. Pace the work. Twelve five-minute assignments achieve more than two one-half hour assignments. Also changing the pace or task frequently will eliminate the focusing on their inability to sustain effort.
11. Try to judge the length of the child's attention span and adjust the assignments to that length.
12. Allow the brain injured child more breaks between periods of work. Provide modified programs and rest periods.
13. Give brief instructions using pauses between phrases and specific instructions to allow the child to process the information. Provide visual and auditory cues.
14. Speak at a slower rate, when involved in a one-to-one situation. Provide extra time for formulation of responses.
15. Link new information with previously learned information.
16. Do not use figurative or idiomatic language.
17. Repeat instructions. Present materials sequentially. Example - you must complete three things:

    #1 ______________, #2 ______________, #3 ______________.

18. Have the child repeat directions back to you.
19. Periodically summarize's material being taught.
20. Place material in child's best visual field.
21. Provide longer viewing time for visual material.
22. Number written directions. Teach the child how to check each step as he/she completes it.
23. Provide the brain injured student with a brief sequence of tasks he/she is to follow to complete the overall academic task.
24. Keep the amount of written information on a page to a minimum. It is better to give the child one task per page rather than six tasks on one page. Use cues to aid scanning, large print, or colored paper.
25. Help the child to develop an assignment sheet. Provide the child with a new assignment sheet per day. As the child completes an assignment, mark it off on the assignment sheet. At the end of the day the child will be able to see what has or has not been completed. Adjust quantity of assignments.
26. Allow the child to use a tape recorder, calculator, alarm watch, typewriter, computer or scribe.
27. Provide small group learning and social opportunities. Small group situations are better than large group situations.
28. Prepare the brain injured child for new situations. Provide the student with extra time to complete new tasks. Explore variety of cuing systems (e.g., verbal reminders, notes or gestures).
29. Reinforce the child for completion of tasks, proper attending behavior, etc.
30. Give much encouragement, praise, and affection as these children are easily discouraged. Giving them responsibilities that they can successfully carry out, will help them feel needed, and worthwhile. Begin with simple tasks and gradually build toward more complex ones. Keep the student involved.
31. Provide the child with as much verbal feedback as you can regarding both his/her behavioral and academic performance.
32. Redirect the agitated student away from the source of frustration. Offer alternative action. Structure practice situations.
33. Use multi-sensory approaches to teach concepts.
34. Establish a home note with the parents and rehabilitation team so that they are aware of what goes on in the classroom.
35. Communicate with parents. They often know what "works" with their child.
36. Be aware of family members who also experienced a traumatic brain injury.
37. Remain as flexible as possible. Establish goals and evaluate frequently.
38. Recognize your own limits.

SUGGESTED SCHOOL RE-ENTRY CHECKLIST

Student: ______________________________ School/Grade: ______________________________

Date of Injury: ____________________

Date Completed: **IMMEDIATELY FOLLOWING INJURY**

__________ Contact parent(s) to:
- Inquire regarding student's condition.
- Obtain release for hospital contact.

__________ Contact TBI representative(s) in school district to:
- Inform them about student.
- Determine available resources.
- Assign case manager for schools.

__________ Contact the child's case manager at hospital to inform him/her of school contact.

AFTER STUDENT'S CONDITION HAS STABILIZED

__________ Arrange meeting with hospital case manager to:
- Determine if/when to send school work.
- Assess potential special needs (e.g., tracheostomy, ambulation).
- Visit with student and rehabilitation staff.
- Obtain copies of hospital evaluations (psych, educational, PT/OT, speech).

__________ Conduct inservice in school to:
- Provide specific information about student.
- Provide more general information about TBI.
- Discuss potential modifications (ramp, wheelchair, lighting).

UPON HOSPITAL DISCHARGE

__________ Contact parent(s):
- Determine what they have been told.
- Tentative date of return to school.

__________ Follow-up with hospital case manager:
- Get update on condition/special needs (include related services).

__________ Develop tentative plan for school re-entry (consider need for special education, 504 and related services).

__________ Modify school environment, if necessary.

ARRIVAL AT SCHOOL

__________ Conduct initial evaluation/give feedback to teachers and parents.

__________ Reassess/modify educational plan.

RE-ENTRY CONSIDERATIONS

- The needs of the student as defined by IEP goals and objectives.

- Scheduling concerns:
  - ° Time in school.
  - ° Scheduling around appointments.
  - ° Fatigue.
  - ° Hallway chaos.

- Environmental and safety concerns.

- Medical concerns.

ENVIRONMENTAL MODIFICATIONS IN THE CLASSROOM FOR INSTRUCTION OF CHILDREN WITH HEAD INJURIES

1. Provide special places for keeping important materials and help the child to remember to use them (separate storage for books and notebooks and for supplies).

2. Encourage the use of a special notebook for classroom assignments (different notebooks for different subjects that are color coded).

3. Provide a workspace with fewer distraction (study carrel, back to classroom, earplugs, etc.). May also need to sit according to visual field impairments or deficits.

4. Place child close to teacher during group and individual work time where the child can best see, hear, and interact with teacher and group.

5. Utilize an assessment sheet to help the student track work and experience a sense of achievement when work is completed.

6. Use a home/school note so the parents may also monitor task completion and reward efforts at home.

7. Provide compensatory equipment such as study guides, computers, tape recorded materials, and adaptive equipment.

8. Use written cues, written homework assignments, and visual aids whenever possible. Underline key words, use graphic organizers.

9. Post classroom rules and make them applicable to the whole class.

10. Post the daily schedule, placing more difficult classes first.

11. Modify length of school day.

12. Change classroom to avoid physical barriers (stairs, long halls, change of building).

13. Reduce the length of assignments or use easier materials.

MEDICATIONS COMMONLY USED AFTER TBI

DRUG	PURPOSE	POTENTIAL SIDE EFFECTS
TEGRETOL	Seizure Control, Violent Outbursts, Mania	Sedation, Dizziness, Aplastic Anemia,
DILANTIN (phenytoin)	Seizure Control	Loss of Balance, Slurred Speech, Nausea, Vomiting, Confusion
DEPAKOTE (valproic acid)	(Similar to Tegretol) Also for Headaches	(Similar to Tegretol)
LITHIUM (lithium carbonate)	Manic States, Violent Outbursts	Sedation, Tremor, Dizziness, Confusion
RITALIN (methylphenidate)	Stimulant (Coma) Attention Problems	Insomnia, Anorexia, Irritable, Headache, Abdominal Pain, Tics, Growth Suppression
DEXEDRINE (dextroamphetaminse)	(Similar to Ritalin)	(Similar to Ritalin)
CYLERT (pemoline)	(Similar to Ritalin)	(Similar to Ritalin)
HALDOL (haloperidol)	Psychosis Delusions/Hallucinations	Sedation, Dry Mouth, Constipation, Dizziness
MELLARIL (thioridazine)	(Similar to Haldol)	(Similar to Haldol)
PROZAC (fluoxetine)	Depression, Obsessiveness	Dry Mouth, Nausea, Diarrhea, Sedation, Agitation, Anxiety, Headache
ZOLOFT (sertraline)	(Similar to Prozac)	(Similar to Prozac)
TOFRANIL (imipramine)	Anxiety (incl. PTSD), Sleep Disturbance, Pathological Laughing/Crying, Depression	Dizziness, Blurred Vision, Weight Gain, Hypotension, Dry Mouth, Confusion, Constipation, Urinary Retention
ELAVIL (amitriptyline)	Sleep Disturbance, Agitation and Confusion, Depression, Headache	(Similar to Tofranil)
INDERAL (propranolol)	Headache, High Blood Pressure	Sedation, Depression
CATAPRES (clorazepam)	(Similar to Inderal) has Psychomotor Agitation	Sedation
KLONIPIN (clorazepam)	Seizure Suppression, Sleep Disturbance, Muscle Relaxant (spasticity), Panic Attacks, Agitation	Lightheaded, Ataxia, Confusion, Memory
VALIUM (diazepam)	Motor Spasticity, Anxiety	Sedation, Confusion
TRANXENE (clorazepate)	(Similar to Valium)	Sedation, Confusion
BOTOX (botulinum toxin)	Motor Spasticity	Muscle Irritation, Muscle Weakness
LIORESAL (baclofen)	Motor Spasticity, Pain	Sedation (usually transient)

OTHER ISSUES

1. **Family**
    - May have difficulty accepting limitations.
    - Weariness.
    - Other members may be injured.
    - Financial difficulties.
    - Increases burden on siblings.
    - Parents have knowledge in key areas for service.
    - Families will likely need grief counseling.
2. **Peers**
    - Effects on peers and friends.
    - Ways peers can assist.

REENTRY OH-15

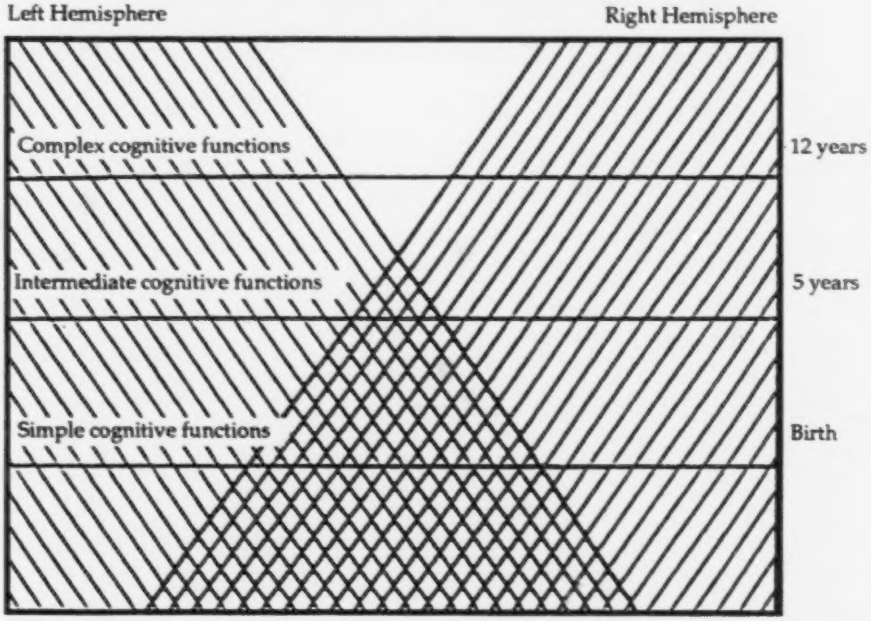
STAGES OF NEURODEVELOPMENT

Reprinted with Permission from Head Injury in Children and Adolescents: A Resource Review for School and Allied Professionals by **Vivian Begali** (1987).

Neurodevelopmental theory affords professionals a basis by which to comprehend more fully the significance of age-at-injury upon outcome. The schematic model of cognitive neurodevelopment (see Figure 6) shows the progressive nature of hemispheric specialization for complex cognitive functions. Both hemispheres tend to share responsibility for simple cognitive functions during the first five years. Between the ages of 5 and 8 years, the left and right hemispheres of most individuals begin to specialize in certain verbal and nonverbal functions, respectively. This does not indicate, however, that the hemispheres develop functional independence with maturity. Rather, both begin to take on the respective responsibilities for which they were innately assigned (Kolb & Whishaw, 1980). They continue to work cooperatively on a number of functions and maintain a synergistic relationship. Both hemispheres share responsibility for most intellectual functions yet are capable of making separate cognitive contributions. Table 9 lists the principal functions of the left and right hemispheres. The list was derived from observations of patients with lateralized brain damage, split brain studies, and experimental investigations of hemispheric preferences (Cummings, (1985).

FIGURE 6

PROGRESSIVE SPECIALIZATION OF COMPLEX FUNCTIONS BY LEFT AND RIGHT HEMISPHERES


Left Hemisphere
Right Hemisphere
Complex cognitive functions
12 years
Intermediate cognitive functions
5 years
Simple cognitive functions
Birth
X

COLLABORATIVE PROBLEM SOLVING WORKSHEET

I. Problem Definition

- A. Identify component parts.
- B. Prioritize component parts.
- C. Define the problem, focusing on one component part. (Make sure the definition is clear, objective, and concrete.)
- D. State short-term and/or long-term goals.
- E. Determine data collection procedures.

II. Problem Analysis

- A. Setting (where does the problem occur?).
- B. Participants (who is involved?).
- C. Strength (e.g., how frequent, intense, severe?).
- D. Conditions Analysis
  1. Antecedents (e.g., What factors precede the problem? What prerequisite skills are necessary to perform at the desired level?).
  2. Consequences (e.g., What typically follows the problem? What are the reactions of students, teachers, parents?).
  3. Situational (e.g., What else is occurring at the time of the problem? What patterns are noticed, such as common times, subject areas, etc.?).
- E. Resources available to contribute to problem solution.

III. Plan Development and Implementation

A. Brainstorm alternative solutions.

Alternative Solutions	**Possible Consequences**

B. Identify chosen alternative.

C. Development management plan.

	Program Steps	Who	What	When	Where	Desired Outcome
1.						
2.						
3.						
4.						
5.						
6.						

IV. Plan Evaluation

A. Review steps, desired and obtained outcomes, and determine necessary revisions and responsibilities.

B. Specify follow-up procedures.

UNIT 3

USING THE TEAM APPROACH

OBJECTIVES FOR TEAM APPROACH

1. Participate on a transdisciplinary team.
2. Discuss two case histories.
3. Identify educational needs using the worksheets in the participants manual.
4. As a team, make a five-minute presentation on your plan.
5. Evaluate each plan's comprehensiveness.

CASE STUDY

Name of Student: Denise
Date of Birth: April 22, 1976 Date of Team Meeting: August 28, 1993
Date of Injury: March 24, 1993 Grade: 12 School: Sky High

Denise is a seventeen-year-old who was the front seat, unrestrained, passenger in a motor vehicle accident. She was comatose for fifteen days and experienced post traumatic amnesia for several weeks. She sustained the following injuries: left basilar skull fracture, left brain stem contusion, three broken ribs, a punctured lung, and fractured left pelvis.

Denise was hospitalized for two months after which time she was transferred to a Community and Home program.

Currently, Denise is medically stable. Her current medication management consists of Tylenol for headache relief.

She demonstrates functional ambulation on all terrains. However, she displays a decrease in physical strength and endurance. Premorbidly Denise was physically active and maintained a level of physical fitness.

Denise is able to articulate in basic functional conversation. However, she is noted to perseverate in her communication. She also displays impaired writing skills and impaired comprehension.

Denise displays serious cognitive impairments which affect her ability to return to her previous lifestyle. The major area of concern is her extremely decreased recent memory abilities. Also noted is impairment of intermediate and remote memories. She also demonstrates a decrease in problem-solving skills, decreased attention, and impulsivity.

She is independent with regard to dressing, grooming, and bathing but lacks initiation towards these activities. She is unable to access the community independently.

Prior to the accident, Denise demonstrated above average performance on achievement and aptitude tests. However, her classroom performance was inconsistent. She earned A & B grades in some classes and D & F grades in others. At the beginning of the 11th grade, she transferred from a traditional school program to an alternative p.m. program.

Denise currently lives with her mother, stepfather, an older brother, a younger brother, and a younger sister who is hearing impaired and has an attention deficit. Before the injury, Denise was described as being moody and aggressive. She is now described as depressed and anxious, confused, and agitated when stressed.

SMALL GROUP WORKSHEET

Instructions: You are a team of professionals about to receive a new student who has sustained a traumatic brain injury. Use this sheet to develop a transdisciplinary program.

Student's Name: ____

Date of Birth: ____________ Date of Team Meeting: ______________

Date of Injury: _____________ Grade:____ School: _______________________

I. **OVERVIEW**: (Pick out major points from case study and list briefly.)

II. **MEDICAL**: (State where the student is medically and list any questions you as a school team may need to ask the hospital case manager.)

CONSIDERATIONS:

Gather information on:

1. The severity and location of injuries to the brain, internal organs, fractures, etc.
2. Anticipated/expected deficits due to the injuries.
3. Medications: effects/side effects.
4. Future medical needs (e.g., surgery-cosmetic/orthopedic).

MEDICAL GOALS: (These goals would be medical in nature and not the responsibility of the educational team, but the team needs to know about doctors appointments, medication changes, etc.)

TEAM APPROACH OH-2

III. **PHYSICAL SKILLS AND DAILY LIVING SKILLS:** (State where the student is from the perspective of a physical therapist, occupational therapist, and adaptive physical education specialist. Briefly describe student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. What adaptive equipment may be necessary?
2. What environmental modifications may be needed?
3. What daily living skills are impaired?

P.T., O.T., AND ADAPTIVE P.E. GOALS AND ACTIVITIES: (Include evaluation procedures.)

IV. **COGNITIVE:** (Briefly describe the student's cognitive deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. How does the student's current performance compare to pre-injury skill levels.
2. What combination of direct retraining and/or compensatory skill training will be necessary to reach the student's goals.

COGNITIVE GOALS AND ACTIVITIES: (Include evaluation procedures.)

V. **BEHAVIOR/PSYCHOSOCIAL**: (Brief description of a student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. Individual or group counseling?
2. Does there need to be peer education and / or environmental accommodation to maintain / develop friendships (e.g., Study Buddy and Peer Tutor) ?

BEHAVIORAL GOALS AND ACTIVITIES: (include evaluation procedures).

VI. **COMMUNICATION**: (Brief description of the student's deficits; list questions that need clarification or elaboration).

CONSIDERATIONS:

1. How did the injury affect reading, writing, auditory comprehension, expressive language skills?

COMMUNICATION GOALS AND ACTIVITIES: (include evaluation procedures).

TEAM APPROACH OH-4

ENVIRONMENTAL MODIFICATIONS IN THE CLASSROOM FOR INSTRUCTION OF CHILDREN WITH HEAD INJURIES

1. Provide special places for keeping important materials and help the child to remember to use them (separate storage for books and notebooks and for supplies).

2. Encourage the use of a special notebook for classroom assignments (different notebooks for different subjects that are color coded).

3. Provide a workspace with fewer distractions (study carrel, back to classroom, earplugs, etc.). May also need to sit according to visual field impairments or deficits.

4. Place child close to teacher during group and individual work time where he/she can best see, hear, and interact with teacher and group.

5. Utilize an assessment sheet to help the student track work and experience a sense of achievement when work is completed.

6. Use a home/school note so the parents may also monitor task completion and reward efforts at home.

7. Provide compensatory equipment such as study guides, computers, tape recorded materials, and adaptive equipment.

8. Use written cues, written homework assignments, and visual aids whenever possible. Underline key words, use graphic organizers.

9. Post classroom rules and make them applicable to the whole class.

10. Post the daily schedule, placing more difficult classes first.

11. Modify length of school day.

12. Change classroom to avoid physical barriers (stairs, long halls, change of building).

13. Reduce the length of assignments or use easier materials.

MOTOR ISSUES

Depending upon the site and extent of damage to the brain, motor deficits resulting from TBI can range from mild impairment of fine volitional movements to complete loss of functional mobility due to paralysis. In general, prognosis for good motor recovery tends to be more optimistic than usual outcomes for cognitive, social, and communicative recovery.

Spasticity and ataxia are the most common forms of gross motor deficits secondary to severe TBI. It is estimated that at least 75 percent of all TBI survivors will regain ambulation and self care skills; yet only 10 percent of this population will completely recover all neuromotor ability. Similarly, persistent fine motor and visual motor deficits have been found one year post- injury with children who have suffered a mild TBI.

In any TBI, one or more of the following motor deficits may occur:

- **Paralysis** - loss of movement that ranges from total paralysis to mild loss of movement. This may manifest itself with incoordination of movement in one or more limbs and is frequently seen on one side of the body (hemiplegia).
- **Ataxia** - inaccurate movement of limbs, with disturbances of equilibrium (balance) in standing and walking.
- **Tremor** - involuntary movements that occur with movement or at rest.
- **Motor dyspraxia** - poor motor planning abilities and difficulty with executing planned, purposeful movements, even though the person understands the idea.
- **Spasticity** - increased muscle tone, usually in the extremities which manifests itself in resistance to passive stretch. It may cause the extremities to be held in stereotypical patterns and cause difficulty in using the limb actively.
- **Tactile defensiveness** - tactile (touch) stimuli causes discomfort, excessive emotional reactions, and a desire to escape it (i.e., hyperactivity, or agressiveness toward the stimulus).
- **Fine motor problems** - decreased fine motor skills is a common result of TBI. This includes difficulty with written communication (handwriting or typing), scissor use, managing clothing, especially fasteners, and general manipulation of smaller objects. Hemiplegia (paralysis on one side of the body) often interferes with a person's ability to manipulate objects.

Perceptual Issues and Perceptual Motor Issues

TBI can cause a variety of visual and perceptual problems. These may include:

- Visual field cuts.
- Eye muscle imbalances leading to double vision or the brain's repression of visual information gained through one eye.
- Difficulty with spatial relations.
- Difficulty reproducing three-dimensional designs with blocks.
- Difficulty copying designs with paper and pencil.

The Motor Development Team's Role in TBI

All therapeutic intervention is dependent on the age of the student, the amount of time since the injury, the extent of the injury, the prognosis for recovery, and current pretraumatic developmental levels. These all determine whether the focus should be on attempting to reestablish pretraumatic levels of functioning, or if the focus should be on teaching compensatory and adaptive skills.

Occupational Therapy. A variety of treatment models may be utilized including:

1. Direct treatment (in class or "pull out" model). Emphasis is placed on:
   - Improving overall fine motor skills (dexterity, manipulation skills)
   - Teaching the student techniques to compensate for decreased motor abilities (i.e., teaching a student with hemiplegia a one-handed shoe, tying program to increase independence).
   - Improving self-care skills - either re-learning the skills, or teaching compensatory strategies or alternative methods.
   - Improving perceptual skills.
   - Improving written communication - either handwriting or typing and suggesting alternative or compensatory strategies when necessary.
   - Addressing positioning within the school environment to promote increased attending and/or to provide optimal positioning for prevention of physical deformities.
2. Consultation with school personnel regarding:
   - Strategies to accommodate various physical, emotional, and behavioral deficits.
   - Incorporating activities into the school routine that would improve the student's motor abilities.
   - Determining appropriate curriculum regarding life skills depending on the functional level of the student.
   - Determining appropriate pre-vocational or vocational training that would benefit the student.

Physical Therapy: A variety of treatment models may be utilized including:

1. Direct treatment (in class or "pull out" model). Emphasis is placed on:
   - Improving mobility in school and community settings. This may include independent ambulation or the use of assistive devices such as a walker, cane, or wheelchair.
   - Improving management of architectural and environmental barriers, i.e., - maneuver up and down stairs, over curbs, open doors, etc.
   - Increasing endurance for maximum participation in school activities.
   - Improving strength for maximum participation in school activities.
2. Consultation with school personnel regarding:
   - Optimal positioning in the classroom to decrease the development of physical deformities.
   - Increasing school personnel's awareness of potential physical danger that may result from the student's poor judgment resulting from a TBI.
   - Incorporating activities into the school routine that would benefit the child physically and improve his/her motor control.

ADAPTED PHYSICAL EDUCATION

What is Adapted Physical Education?

Adapted physical education is a diverse program of developmental activities, exercises, games, rhythms, and sports designed to meet the unique physical education needs of individuals. Adapted physical educators adjust learning experiences to meet individual needs and assure optimal success in physical and motor functioning.

Individuals Who Qualify for Adapted Physical Education

Adapted physical education serves individuals with handicapping conditions as defined in IDEA as well as those who may have conditions that affect functioning and result in a need for specially designed instruction. A student who has suffered from a traumatic injury who needs assistance in regular physical education class or who needs a specially designed physical education program would qualify for adapted physical education services. APE is not only a related service, but can be a primary service.

Basic Services

The first step in developing an appropriate individualized educational program (IEP) is to assess the student's current abilities and needs. Assessment is the combined process of testing, measuring, and evaluating. Next, the IEP is planned by a multidisciplinary team and agreed upon in writing by both the school personnel and the parents.

Types of Adapted Physical Education Services

Adapted physical education may take place in classes that range from integrated (i.e., regular physical education classes), segregated (i.e., including only students with unique needs), or on a one-to-one basis. It may have a developmental, community-based, or other orientation. Adapted physical education may be on a direct, consultation, or monitor basis. Adapted physical educators may use various teaching styles and may utilize a variety of facilities such as community, home, or school.

Adaptive Physical Educator's Role in TBI

Traumatic injuries often leave behind deficits that affect every day functioning in the home, school, and community. Deficits can occur in physical, cognitive, communicative, and psychosocial areas which may naturally prevent an individual from achieving his/her highest potential when participating in physical education activities.

In general, students who have suffered from a traumatic brain injury may have difficulty in the following areas:

- Cognitive Deficits
- Communication Deficits
- Behavior/Social Deficits
- Motor Deficits

Adaptive physical education programs can be designed to meet the specific needs of individuals who have TBI. Programs can be set up by consultation or direct service in order to meet the needs through a transdisciplinary approach.

Some of the benefits from an adapted physical education or participation in a regular physical education program will include increased:

- Perceptual Motor Skills
- Spatial Awareness
- Hand-Eye, Hand-Foot Coordination
- Balance
- Visual Perception
- Hearing
- Strength
- Endurance
- Self-Esteem
- Socialization Skills
- Development of Leisure/Lifetime Skills
- Physical Fitness

Reprinted with Permission from: *Life Centered Career Education: A Competency Based Approach.* Donn E. Brolin Editor. Published by The Council for Exceptional Children, 1987.

TEAM APPROACH Page 11

FIGURE 2-2
Life Centered Career Education Competencies (Revised 1/87)

Curriculum Area	Competency	Subcompetency: The student will be able to:						
DAILY LIVING SKILLS	1 Managing Personal Finances	1 Count money & make correct change	2 Make responsible expenditures	3 Keep basic financial records	4 Calculate & pay taxes	5 Use credit responsibly	6 Use banking services	
	2 Selecting & Managing a Household	7 Maintain home exterior/interior	8 Use basic appliances and tools	9 Select adequate housing	10 Set up household	11 Maintain home grounds		
	3 Caring for Personal Needs	12 Demonstrate knowledge of physical fitness, nutrition & weight	13 Exhibit proper grooming & hygiene	14 Dress appropriately	15 Demonstrate knowledge of common illness prevention & treatment	16 Practice personal safety		
	4 Raising Children & Meeting Marriage Responsibilities	17 Demonstrate physical care for raising children	18 Know psychological aspects of raising children	19 Demonstrate marriage responsibilities				
	5 Buying, Preparing & Consuming Food	20 Purchase food	21 Clean food preparation areas	22 Store food	23 Prepare meals	24 Demonstrate appropriate eating habits	25 Plan/eat balanced meals	
	6 Buying & Caring for Clothing	26 Wash/clean clothing	27 Purchase clothing	28 Iron, mend & store clothing				
	7 Exhibiting Responsible Citizenship	29 Demonstrate knowledge of civil rights & responsibilities	30 Know nature of local, state & federal governments	31 Demonstrate knowledge of the law & ability to follow the law	32 Demonstrate knowledge of citizen rights & responsibilities			
	8 Utilizing Recreational Facilities & Engaging in Leisure	33 Demonstrate knowledge of available community resources	34 Choose & plan activities	35 Demonstrate knowledge of the value of recreation	36 Engage in group & individual activities	37 Plan vacation time		
	9 Getting Around the Community	38 Demonstrate knowledge of traffic rules & safety	39 Demonstrate knowledge & use of various means of transportation	40 Find way around the community	41 Drive a car			
PERSONAL-SOCIAL SKILLS	10 Achieving Self Awareness	42 Identify physical & psychological needs	43 Identify interests & abilities	44 Identify emotions	45 Demonstrate knowledge of physical self			
	11 Acquiring Self Confidence	46 Express feelings of self-worth	47 Describe others' perception of self	48 Accept & give praise	49 Accept & give criticism	50 Develop confidence in oneself		
	12 Achieving Socially Responsible Behavior	51 Develop respect for the rights & properties of others	52 Recognize authority & follow instructions	53 Demonstrate appropriate behavior in public places	54 Know important character traits	55 Recognize personal roles		
	13 Maintaining Good Interpersonal Skills	56 Demonstrate listening & responding skills	57 Establish & maintain close relationships	58 Make & maintain friendships				
	14 Achieving Independence	59 Strive toward self actualization	60 Demonstrate self-organization	61 Demonstrate awareness of how one's behavior affects others				
	15 Making Adequate Decisions	62 Locate & utilize sources of assistance	63 Anticipate consequences	64 Develop & evaluate alternatives	65 Recognize nature of a problem	66 Develop goal seeking behavior		
	16 Communicating with Others	67 Recognize & respond to emergency situations	68 Communicate with understanding	69 Know subtleties of communication				
OCCUPATIONAL GUIDANCE AND PREPARATION	17 Knowing & Exploring Occupational Possibilities	70 Identify remunerative aspects of work	71 Locate sources of occupational & training information	72 Identify personal values met through work	73 Identify societal values met through work	74 Classify jobs into occupational categories	75 Investigate local occupational & training opportunities	
	18 Selecting & Planning Occupational Choices	76 Make realistic occupational choices	77 Identify requirements of appropriate & available jobs	78 Identify occupational aptitudes	79 Identify major occupational interests	80 Identify major occupational needs		
	19 Exhibiting Appropriate Work Habits & Behavior	81 Follow directions & observe regulations	82 Recognize importance of attendance & punctuality	83 Recognize importance of supervision	84 Demonstrate knowledge of occupational safety	85 Work with others	86 Meet demands for quality work	87 Work at a satisfactory rate
	20 Seeking, Securing & Maintaining Employment	88 Search for a job	89 Apply for a job	90 Interview for a job	91 Know how to maintain post-school occupational adjustment	92 Demonstrate knowledge of competitive standards	93 Know how to adjust to changes in employment	
	21 Exhibiting Sufficient Physical-Manual Skills	94 Demonstrate stamina & endurance	95 Demonstrate satisfactory balance & coordination	96 Demonstrate manual dexterity	97 Demonstrate sensory discrimination			
	22 Obtaining Specific Occupational Skills			There are no specific subcompetencies as they depend on skill being taught				

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EXAMPLES OF COMPENSATORY STRATEGIES FOR COGNITIVE IMPAIRMENTS

Attention and Concentration

A. *External Aids*

1. Use a timer or alarm watch to focus attention for a specific period.
2. Organize the work environment to minimize or eliminate distractions.
3. Use a written or pictorial task plan with built-in rest periods and reinforcement; move marker along to show progress.
4. Place a symbol or a picture card in an obvious place in the work area to remind the student to maintain attention.

B. *Internal Procedures*

1. Set increasing demands and goals for self, including sustained work time.
2. Self-instruct (e.g., "Am I wandering? What am I supposed to do?"). (Written cue cards may initially be needed for training period).

Orientation (Time, Place, Person, and Event)

A. *External Aids*

1. Use a log or journal book or tape recorder to record significant information and events of the day.
2. Refer to pictures of persons who are not readily identified (keep with log book).
3. Use appointment book or daily schedule sheet.
4. Use alarm watch that is set for regular appointments.
5. Refer to maps or pictures for special orientation; make maps with important landmarks.

B. *Internal Procedures*

1. Select anchor points or events during the week and then attempt to reconstruct previous or subsequent events in time.
2. Request time, date, and similar information from others when necessary.
3. Scan environment for landmarks.

Input Control (Amount, Duration, Complexity, Rate, and Interference)

A. *Auditory*

1. Give feedback to speaker. ("Please slow down; speed up; break information up into smaller chunks.")
2. Request repetition in another form ("Would you write that down?").

B. *Visual*

1. Request longer viewing time or repeated viewing; extra reading time.
2. Cover parts of a page and look at exposed areas systematically.
3. Use finger or index card to assist scanning and to maintain pace.
4. Use symbol to mark right and left margins of written material on top and bottom segments as anchors in space.

Ylvisaker, M. (1985). Editor. Head Injury Rehabilitation: Children and Adolescents. San Diego: College Hill Press

5. Use large print books or talking books.
6. Request a verbal description.
7. Remove an object from its setting and examine it, then return it and examine it again.
8. Place items in best visual field and eliminate distractors.
9. Turn head to compensate for field cut.

Comprehension and Memory Processes

1. Use self questions (e.g., "Do I understand? Do I need to ask a question? How is this meaningful to me?"). Periodically look for gaps, misconceptions, or confusion by summarizing or explaining and checking back with speaker, a written source, or reference material.
2. Build 'frames' or background for new information that is of particular significance or interest. Read summaries, general textbooks, and ask knowledgeable persons about topics of interest.
3. Use a study guide for extended discourse material (survey, question, read, recite, review).
4. Make charts and graphs of important relationships in textual material.
5. Use external memory aids (tape recorder, log book, notes).
6. Rehearse convert or overt; auditory-vocal, or pantomime.
7. Utilize mnemonics.
8. Use diagrams or forms that facilitate deeper encoding of material and its subsequent retrieval.
9. Relate the information to personal life experiences and current knowledge. Use semantic knowledge of basic scripts (going to restaurant, buying groceries) to help reconstruct events.
10. Project and describe a situation in which targeted material will be needed.
11. At retrieval, reconstruct environment in which information was received.
12. Verbalize visual-spatial information. Visualize verbal information in graphs, pictures, cartoons, or action based imagery.
13. Keep items in a designated place.

Word Retrieval

1. Search lexical memory according to categories and sub-categories.
2. Describe the concept; circumlocute freely (talk about or around it).
3. Use gestures or signs.
4. Attempt to generate a sentence or use a carrier phrase.
5. Search letters or sounds of the alphabet (more effective in retrieving members of a limited category such as names).
6. Describe perceptual attributes and semantic features of the concept.
7. Draw the item.
8. Attempt to write the word.

9. Create an image of the object in a scene; then attempt to describe the scene.
10. Attempt to retrieve the overlearned opposite.
11. Free association with the image in mind.
12. Associate persons' names with physical characteristics or a known person of the same name.

Thought Organization and Verbal Expression

1. Use a structured thinking procedure.
2. Use knowledge of scripts to generate real or imagined descriptions of experiences (narratives).
3. Construct a time line to maintain appropriate sequence of events.
4. Note the topic in any conversation; self-question about the main point of expression; alert others before shifting topic abruptly.
5. Watch others for feedback as to whether your words are confusing. Watch facial expressions and so forth, or directly ask listeners, "Am I being clear?"
6. Rehearse important comments or questions and listen to self.
7. Set limits of time or allowable number of sentences in any one turn.

Reasoning, Problem Solving, Judgment

1. Use a problem-solving guide.
2. Use self-questioning for alternatives or consequences.
3. Look at possible solutions from at least two different perspectives.
4 Scan the environment for cues as to appropriateness or inappropriateness of a behavior.
5. Set specific times or places for behaviors that are appropriate in specific occasions.
6. Actively envision situations to which successful procedures can be generalized.

Self Monitoring

1. Use symbols or signs, places in obvious places, or alarms that mean: "pause," or "stop," or "Am I doing what I should be doing?".
2. Use a book or notebook with cards inserted at selected places with self monitoring cues.
3. Pair specific self-instruction with the associated emotion (e.g., "Calm down" when angry).

Task Organization

1. Use a task organization checklist: materials, sequenced steps, time line, evaluation of results. Check each when completed.
2. Prepare work space and assign space as task demands.

EFFECTIVE MANAGEMENT OF THE BRAIN INJURED CHILD IN THE SCHOOL SETTING

Elaine S. Pollock

CLASSROOM STRATEGIES:

1. Recognize student's present level of functioning. Adjust your expectations to take into account the child's deficits and disabilities. For example, if the student has a short attention span, don't expect him to concentrate on one task for a long period.
2. Provide a non-stressful climate with adequate emotional warmth and physical contact from the teacher and, when possible, from the peer group.
3. Help the child to develop an organizational system (i.e., this is where your books go, this is where your notebooks go, this is where you can find a pencil, etc.).
4. Structure the classroom environment as much as possible. Be sure the brain injured child understands your expectations. List classroom rules and consequences somewhere in the classroom. Repeat rules and consequences frequently.
5. Place the brain injured child next to students who won't provoke him and close to the teacher's desk. Provide peer tutor or adult tutor nearby.
6. Try to remove unnecessary environmental distractions such as background noise and unneeded pencils, books and papers from the student's desk.
7. Use student's strongest learning modality.
8. Break assignments into small steps.
9. Gradually increase the length and difficulty of tasks. Remove time limits on tests.
10. Pace the work. Twelve five-minute assignments achieve more than two one-half hour assignments. Also changing the pace or task frequently will eliminate the focusing on their inability to sustain effort.
11. Try to judge the length of the child's attention span and adjust the assignments to that length.
12. Allow the brain injured child more breaks between periods of work. Provide modified programs and rest periods.
13. Give brief instructions using pauses between phrases and specific instructions to allow the child to process the information. Provide visual and auditory cues.
14. Speak at a slower rate, when involved in a one-to-one situation. Provide extra time for formulation of responses.
15. Link new information with previously learned information.
16. Do not use figurative or idiomatic language.
17. Repeat instructions. Present materials sequentially. Example - you must complete 3 things:

    #1 ______________, #2 ______________, #3 ______________.

18. Have the child repeat directions back to you.
19. Periodically summarize material being taught.
20. Place material in child's best visual field.
21. Provide longer viewing time for visual material.
22. Number written directions. Teach the child how to check each step as he/she completes it.
23. Provide the brain injured student with a brief sequence of tasks he/she is to follow to complete the overall academic task.
24. Keep the amount of written information on a page to a minimum. It is better to give the child one task per page rather than six tasks on one page. Use cues to aid scanning, large print or colored paper.
25. Help the child to develop an assignment sheet. Provide the child with a new assignment sheet per day. As the child completes an assignment, mark it off on the assignment sheet. At the end of the day the child will be able to see what he/she has or has not completed. Adjust quantity of assignments.
26. Allow the child to use a tape recorder, calculator, alarm watch, typewriter, computer or scribe.
27. Provide small group learning and social opportunities. Small group situations are better than large group situations.
28. Prepare the brain injured child for new situations. Provide the student with extra time to complete new tasks. Explore variety of cuing systems (e.g., verbal reminders, notes or gestures).
29. Reinforce the child for completion of tasks, proper attending behavior, etc.
30. Give much encouragement, praise, and affection as these children are easily discouraged. Giving them responsibilities that they can successfully carry out will help them feel needed and worthwhile. Begin with simple tasks and gradually build toward more complex ones. Keep the student involved.
31. Provide the child with as much verbal feedback as you can regarding both his/her behavioral and academic performance.
32. Redirect the agitated student away from the source of frustration. Offer alternative action. Structure practice situations.
33. Use multi-sensory approaches to teach concepts.
34. Establish a home note with the parents and rehabilitation team so that they are aware of what goes on in the classroom.
35. Communicate with parents. They often know what "works" with their child.
36. Be aware of family members who also experienced a traumatic brain injury.
37. Remain as flexible as possible. Establish goals and evaluate frequently.
38. Recognize your own limits.

COGNITIVE DEFICITS AND STRATEGIES FOR INTERVENTIONS

Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Attentional Processes/ Concentration > Reduced arousal; sleepiness. > Difficulty focusing attention and filtering out distractions. > Difficulty maintaining attention. > Difficulty shifting easily from topic to topic. > Difficulty dividing attention between two or more topics or activities.	• A student may fail to follow the teacher's instruction or comprehend a lesson, not because of a willful failure to attend or an inability to understand, but rather because of an inability to filter our environmental distractions or internal feelings or thoughts. • Attentional problems may result in the student talking out of turn, introducing irrelevant topics or responding inappropriately.	° Use clearly defined objectives that are meaningful for the student. ° Use short and concise instructions and assignments. ° Reward on-task behavior; avoid punishing behavior that results from extreme distractibility. ° Use novel, unusual, relevant, or stimulating activities. ° Provide well-placed rest periods or breaks to minimize the effects of mental fatigue or stamina problems. ° Closely monitor time of day, medications and fatigue factors; confer with physicians to determine the feasibility of adjusting medication time so as not to conflict with instructional time. ° Be alert for attentional drifts and redirect the student to task when necessary. ° Explore a variety of cueing systems; e.g., verbal cues, gestural cues or signs at the study site that remind the student to stay on task. ° Remove unnecessary distractors in the classroom. ° Use verbal mediation strategies such as inserting questions within a lesson, directing attention to the task and topic. ° In therapy sessions, use tasks specifically designed to help the student focus his/her attention; e.g., simple maze learning tasks or letter/number cancellation tasks, emphasizing speed, accuracy, and the self-instructions that might promote heightened attention to task; help the student to transfer this improved, self-directed attending skill into the classroom environment. ° Use a timer or alarm to focus attention for a specified amount of time. Reinforce for appropriate behavior. ° Increase gradually the time to attend to increased on-task behavior. ° Teach the student to self-monitor either by marking it down every time he/she is on-task or by self-talk as in asking himself/herself, "Am I paying attention?" ° Reduce unnecessary distractions through a structured environment: use a study corral, limit the number of items on the desk, label places for items, seat the student close to the teacher to aid in cueing. ° Schedule more demanding activities/classes at times when the student is more alert. ° Use a checklist to cue student into activities. Use computers to reinforce, to focus, and to maintain attention. ° Wait until you have the student's attention before you begin a task. ° Use a written pictorial task plan with built-in rest periods and reinforcement; move marker along to show progress. ° Place a symbol or a picture card in an obvious place in the work area to remind the student to maintain attention. ° Shorten school day or reduce course load. ° Stimulant medication. ° Pace the work. Twelve 5-minute assignments achieve more than two 1/2 hour assignments. Also, changing the pace or task frequently will eliminate the focusing on their inability to sustain effort. ° Gradually increase the length and difficulty of tasks. Remove time limits on tests. ° Allow student to use ear plugs to avoid distraction. ° Use of television to increase attention. ° Audiotapes of familiar voices and favorite music.

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Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Visual-Perceptual Processes > Difficulty seeing objects in part of the visual field. > Difficulty perceiving the spatial orientation of objects. > Difficulty separating the object of perception from background stimuli. > Difficulty recognizing objects if too much is presented at once or too rapidly.	• A student may be unable to do otherwise easy math problems if they are presented on a worksheet page filled with other math problems.	◦ Describe the visual instructional material in concrete terms. ◦ Provide longer viewing times or repeat viewings when using visual instructional materials. ◦ Facilitate a systematic approach to reading by covering parts of the page. ◦ Place arrows or cue words, left to right, on the page to orient the student to space; teach the student to use the cues systematically to scan left to right. ◦ Provide large print books or use books on tape. ◦ Move the student closer to visual materials or have the materials enlarged. ◦ Place materials within the student's BEST visual field; consult with an ophthalmologist or occupational therapist about possible visual-perceptual problems. ◦ Modify assignments; be careful not to use "visually busy" materials. ◦ Use bright colors to emphasize. ◦ Use underlining to focus attention. ◦ Use directional signs. ◦ Make sure that printed work is clear and easy to read. Enlarge or emphasize with marker. ◦ Use a 3 x 5 card or ruler to help maintain attention to words being read. ◦ Simple sorting and matching activities (color, shape, size, etc.). ◦ Use computer programs to enhance perceptual skills. ◦ Colorful familiar object (favorite toys, books, pictures) to focus attention. ◦ Contact with various textures, temperature, densities. ◦ Visual tracking exercises (vertical, horizontal, circular). ◦ Involve in graded visual-motor tasks; i.e., tracing, copying designs, discrimination, simple assembly, and visual closure exercises. ◦ Introduce increasingly more difficult visual discrimination exercises (tones, shapes, sizes, words, sentences, embedded figures, etc.
Auditory-Perceptual Processes > Difficulty hearing sounds as part of the auditory field. > Difficulty perceiving the spatial orientation of sounds. > Difficulty separating the sound from background stimuli.	• A student may have difficulty taking notes from lecture.	◦ Limit the amount of information presented; give the student instructions or other verbal information in appropriately small units. ◦ Present verbal information at a relatively slow pace, with appropriate pauses for processing time and with repetition if necessary. ◦ State information in concrete terms, use pictures or visual symbols if necessary. ◦ Have the student sit close to the teacher, with an unobstructed view. ◦ Teach the student to ask questions about the instructions or materials presented, to ensure comprehension. ◦ Teach the student to request slower or repeated presentations if the material is presented too rapidly. ◦ Limit background noise as much as possible. ◦ Model/demonstrate directions or behavior requested. ◦ Ask students to repeat instructions back to you to ensure their understanding. ◦ Tape parts of the class so that student can listen to it again at another time.

Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Auditory-Perceptual Processes (cont.) > Difficulty recognizing information if too much is presented at once or too rapidly.		° Assign a peer tutor to assist in repeating the directions as needed. ° Use multi-sensory approaches to teach concepts. ° Auditory localization and auditory tracking exercises (recordings of familiar people, music).
Memory/Learning Processes > Difficulty recalling events from earlier in the day or previous days. > Difficulty staying oriented to a schedule or to activities. > Difficulty registering new information or words that have been learned, particularly when under stress. > Difficulty searching memory in an organized way and retrieving stored information.	• A student may fail to complete assignment, if not written or repeated several times. • A student may miss classes or do assignments incorrectly because of difficulty remaining oriented. • A student may require an unexpectedly large number of repetitions to learn simple motor sequence (e.g., tying shoes), classroom routines and rules, and textbook information. • A student may need to be reminded to repeat information over and over in order to place it in memory, and to "search" memory in order to find information that has been previously learned.	° Try to make the material to be learned significant and relevant to the student. ° Match the student's learning style (e.g., visual learner) with the instructional method; ° Give meaning to rote data to enhance comprehension and learning. ° Regularly summarize information as it is being taught. ° Give multisensory presentations. ° Reinforce information presented with pictures or other visual images. ° Control the amount of information presented at one time. ° Use overlapping techniques such as repetition and rehearsal. ° Have the student overlearn material. ° Couple new information with previously learned information. ° Teach the student note taking techniques. ° Teach the student to use a datebook for appointments, assignments, and other important information. ° Teach the student to use one or more of the following techniques: visual imagery, "chunking" techniques (organizing information into easily retrieved segments), association techniques, mnemonic devices such as acronyms, repetition and rehearsal techniques or adaptive devices such as appointment books, calendars, alarm watches, and tape recorders. ° Use self-question (e.g., "Do I understand? Do I need to ask a question? How is this meaningful to me?) Periodically look for gaps, misconceptions, or confusion by summarizing or explaining and checking back with speaker, a written source, or reference material. ° Build 'frames' or background for new information that is of particular significance or interest. Read summaries, general textbooks, and ask knowledgeable persons about topics of interest. ° Use a study guide for extended discourse material (survery, question, read, recite, review). ° Make charts and graphs of important relationships in textual material. ° Use external memory aids (tape recorder, log book, notes). ° Rehearse covert or overt; auditory-vocal, or pantomine. ° Utilize mnemonics. ° Use diagrams or forms that facilitate deeper encoding of material and its subsequent retrieval. ° Relate the information to personal life experience and current knowledge. Use semantic knowledge of basic script (going to a restaurant, buying groceries) to help reconstruct events. ° Project and describe a situation in which targeted material will be needed.

Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Memory/Learning Processes (cont.)		° At retrieval, reconstruct environment at which information was received. ° Verbalize visual-spatial information. visualize verbal information in graphs, pictures, cartoons, or action-based imagery. ° Keep items in a designated place. ° Gradually reduce dependency upon structure and memory aids where possible. ° Increase demands for student responsibility; i.e., appointments, clean-up assignments. ° Involve in sequencing activities (numerical ordering, size graduation activities, letter ordering to form familiar words). ° Stress functional skills (e.g., filling out forms, job applications, money management). ° Engage in one-step commands with prompting (e.g., "squeeze my hand", "close your eyes"). ° Conduct sequencing activities using numerals; letters ordered to form words to form sentences; multi-step commands. ° Gradually develop community competence through supervised and semi-supervised practical experience.
Working Memory/ Short-Term Memory > Difficulty holding several words or thoughts or intentions in mind at one time.	• A student may not be able to follow a two-or three-step command, even though comprehension of language is adequate. • A student may not be able to think about a compensatory strategy (e.g., "I must repeat this information in order to remember it."), and listen to the presented information at the same time.	° "Memory notebooks" can be used to give student autobiographic information, diary of daily events, calendars, things to do, transportation (maps, bus schedules, directions), key names of people to be remembered, and necessary information needed to function at home and school.
Knowledge Base/Long-Term Memory > Recall of pre-traumatc difficulty with permanent memory record of knowledge pre-or/and post-traumas.	• Occasionally, a student gains access to pre-traumatically acquired knowledge long after the injury. This may lead the teacher to infer that new learning is occurring at a more rapid rate than is actually the case. Alternatively, the inconsistency in learning rates may lead the teacher to infer that the student is often not trying.	° Provide word processors. ° Use computer assisted learning. Programs can be used in remedial programs that require repetition and mastery. ° Memory therapy group. ° Reality orientation therapy. ° Mnemonic devices, self-instruction, guided inquiry, visual imagery. ° Oral rehearsal; system for asking key questions. ° Chaining words through bizarre imagery.

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Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Organizing Processes > Difficulty analyzing a task into component parts. > Difficulty seeing relationships (similarities/differences) among things. > Difficulty organizing object into appropriate groups or events into appropriate sequences. > Difficulty organizing information into larger units (e.g., main ideas or themes).	• A young student, faced with the task of getting ready for gym class, may be unable to break the task into parts and decide what to do first. • A high school student may understand each part of a text, but be unable to integrate the information to determine the main ideas and write a short summary. • A student may move unexpectedly from topic to topic in conversation because of an unusual set of associations; this may be interpreted as social strangeness or as resulting from lack of knowledge about the subject. • Student may have difficulty organizing his/her day or in orientation in the building.	° Use peers to help student. ° Limit the number of steps in a task. ° Provide part of sequence and have the student finish it. ° Give cues such as "good, now what would you do?" ° Structure thinking processes graphically; e.g., with time lines, outlines, flow charts, graphs. ° Use categories to focus on one topic at a time. ° Identify the main idea and supporting details; categorize the details (e.g., using who, what, when, where and why questions); teach the student to do the same when reading or listening to lecture material. ° Teach the student to practice organizational skills at home (e.g., an organizational system for school material and daily routine). ° Use a log or journal book or tape recorder to record significant information and events of the day. ° Refer to pictures of persons who are not readily identified (keep with log book). ° Use appointment book or daily schedule sheet. ° Use alarm watch that is set for regular appointments. ° Refer to maps or pictures for special orientation; make maps with important landmarks. ° Use a task organization checklist: materials, sequenced steps, time line, evaluation of results. Check each when completed. ° Prepare work space and assign as task demands. Set out the needed materials and gradually have them do it. ° Orient the student to the school building. Do this repeatedly. Practice going to different locations. ° Provide a map or schedule that shows the student where she/he is to go. The schedule could show pictures of materials that are needed to take to a specific class. Allow student to leave early to avoid traffic in the hall. ° Establish a routine at home at school. ° Set-up a notebook for the student. Have separate sections for each class. Place a copy of schedule in the front. Write down time of classes or picture of clocks. ° Use different colors of notebooks for different subjects. ° Teach the student how to take notes and practice it. Teach the student how to outline. Provide partially filled-in outlines for a class discussion. Use the same format for each subject. ° Use SQ3R method (Survey, Question, Read, Recite, Review). ° Use cognitive mapping. (Gold, 1984). Provide orientation drills (e.g., name, age, day? week, year). (Reality Orientation Therapy.)
Reasoning/Abstract Thinking Processes > Difficulty understanding abstract levels of meaning (e.g., figures of speech, metaphors).	• A student who does well with basic mathematical operations may have great difficulty with his/her application in solving word problems or with the more abstract relationships involved in algebra.	° Introduce simple choice-making opportunities. ° Hypothetic problem solving-what should you do if......... ° Identification of similarities and differences in concrete then abstract. ° Interpretation of morals, proverbs, fables, idioms, jokes, riddles, etc. Practice analogies (back is to front as down is to______;) verbal absurdities.

Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Reasoning/Abstract Thinking Processes (cont.) > Difficulty drawing conclusions from facts presented. > Difficulty considering hypothetical explanations for events.	• A student may lose the train of conversation when a figure of speech is used (e.g., "She was climbing the walls.")	
Problem-Solving Processes > Difficulty perceiving the exact nature of the problem. > Difficulty considering information relevant to solving the problems. > Difficulty considering a variety of possible solutions.	• Having forgotten his/her locker combination and not having ready access to homeroom teacher, a student may simply become upset rather than considering carefully who else may be able to help. • Students who fail to comprehend a text with one or two readings may not use strategies to enhance comprehension (e.g., outlining the text, underlining key points, asking themselves questions as they read, discussing the text).	◦ Develop a problem-solving guide to help students through the states of problem solving (e.g., identify the problem; acquire relevant information for solving the problem; generate several possible solutions; list pros and cons for each solution; identify the best solution; create a plan of action; evaluate the effectiveness of the plan). ◦ Raise questions about alternatives and consequences. ◦ Allow the student to bring up relevant real-life problems that are appropriate for group discussion; promote brainstorming about alternative solutions and their usefulness. ◦ Introduce roadblocks and complications to enhance "detouring skills and to encourage flexibility. ◦ Provide ongoing, non-judgmental feedback. ◦ Play different board games to increase reasoning/problem solving (Checkers, Connect Four, Clue, Who Done It?, Chess, etc.). ◦ Practice role-playing with students to solve problems they confront on a daily basis. ◦ Develop active learning situations in which students demonstrate their level of understanding and learn through participation. ◦ Asking questions, rather than telling information, encourages students to be alert, to think on their own, and to be more involved in the lesson. ◦ Use computer programs to aid in reasoning skills. ◦ Recognition of potentially harmful situations and identification of precautions. ◦ Plan, execute, and self-evaluate independent community participation (When do you need to go shopping? How will you get there? How do you ask for a date? If lost, how would you go about finding your way home?) ◦ Systematic practice and guidance. ◦ Develop simple association and categorization skills using real objects, then pictures, then words. ◦ Discuss deficits and their implications. Brainstorm possible compensatory strategies. ◦ Enhance values clarification through discussion, small group activities, simulation exercises.
Executive System > Difficulty setting goals.	• Students who have even a rudimentary awareness of current cognitive limitations	◦ Permit group interaction either as participant or as observer. ◦ Provide a structured environment with clear and consistent expectations.

Possible Cognitive Deficit Following TBI	Illustration of Deficit in a School Setting	Possible Instructional and Compensatory Strategies
Executive System (cont.) > Difficulty perceiving strengths and weaknesses in an objective manner. > Difficulty planning activities. > difficulty initiating and/or inhibiting behavior. > difficulty monitoring one's own behavior. > difficulty evaluating one's own behavior.	commonly complain about tasks that are at a level too low and about restrictions on their activity they perceive as unnecessary. (Control issues, remember to provide choices.) • Organized studying (knowing how to divide the task, how to check one's understanding, how to organize the information for easy learning) relies on intact executive function, rarely found following severe head injury. • Students with initiation problems appear unmotivated and are easily categorized by teachers as resistive or as "behavior problems." • Students who have difficulty monitoring their own behavior and who do not profit from the feedback of others often behave in a socially awkward way.	° Provide classroom rules. Model expected behavior. Review rules frequently ° Provide pictures of expected behavior. ° Develop behavioral contracts. ° Reinforce positive behavior frequently. ° Provide immediate feedback about student behavior. ° Videotape appropriate behavior. ° Use timers to promote on-task behavior. ° Teach self-management skills. (Refer to behavioral section.) ° Overt verbal self-regulation of behavior, faded to "inner speech." ° Refine social skills (simple courtesies, table manners, conversation, telephone use, dating, assertiveness). ° Discuss effects of brain damage and current status. ° Group counseling (peer modeling, role-playing, discussion, peer review). ° Target specific cognitive, social, and vocational goals; formulate written plans of action. ° Plan strategies for accomplishment of short-and long-term goals. ° Develop leisure time preferences. ° Sex education, sexual responsibility, contraception, health issues, values clarification, dating, marriage, children.

FUNCTIONAL ANALYSIS

Defining, Observing, and Analyzing the TBI Student's Behavior

Functional Analysis is a structured, systematic method used to analyze a student's behavior. There are five steps involved in conducting a functional analysis.
The five steps of a functional analysis are:

1. **Data Collection**: serves two purposes in a functional analysis. The first is to obtain a record of the rate of the behavior. This is known as collecting baseline data and is important in order to be able to evaluate behavior change. The second purpose for data collection is to determine the function of the behavior. You need to be able to determine to what purpose this behavior serves the student so a new and more appropriate behavior can be learned to achieve the same ends.
2. **Identify Behavior**: it is important to identify the behavior you want increased or decreased in an observable and measurable way. It is crucial to be clear about what exactly is the inappropriate behavior to be decreased and what is the appropriate replacement behavior to be increased.
3. **Identify Antecedents**: an antecedent is any stimulus that occurs prior to the target behavior and acts as a cue for that behavior to occur.
4. **Identify Consequences**: a consequence is any stimulus that follows a behavior and will result in an increase or a decrease of that behavior in the future.
5. **Communication Ability and Intent**: ability of the child to communicate needs and wants must be evaluated. Intent of the behavior must be evaluated to determine if the function of the behavior is to communicate needs and wants. This step of the functional analysis may be difficult to perform with TBI.

Initial data collection should continue for at least one week, unless the behavior to be decreased is dangerous to the student or others. A convenient method in collecting initial data for a functional analysis is to record the rate of the behavior and to record the ABCs of the target behavior. A = Antecedent-- what happened just before target behavior. B = behavior, and C = consequence-- what happened immediately following target behavior. This method can also be used to collect data on the rate of the replacement behavior once you have implemented a behavioral intervention. See page 26 for an example of a sample functional analysis worksheet.

FUNCTIONAL ANALYSIS WORKSHEET

Behavior (define specifically)	**Antecedent** (what occurred immediately before behavior)	**Consequence** (what occurred immediately after behavior)	**Rate**

Choosing and Implementing Behavioral Interventions

Once a functional analysis has been performed, Least Restrictive Behavioral Intervention procedures must be followed in selecting and implementing a behavioral intervention. LRBI preliminary strategies are crucial for TBI students in order for them to maintain their current appropriate behaviors, while dealing with behavioral deficits that may occur because of new situations and challenges.

- Appropriate and motivating curriculum, crucial for TBI students.
- High rates of positive responses from teachers.
- Structured daily schedules.
- Staff-training.
- Environmental engineering.
- Home notes.
- Precision commands.
- Data collection.
- Parents' conferences.
- Special equipment.
- Supervision.

CROSS REFERENCE FOR BEHAVIORAL INTERVENTION RESOURCES

BEHAVIOR	INTERVENTION	LRBI (Least Restrictive Behavioral Interventions)	RESOURCES	CAUTION (for use with TBI)
Agitation and/or Irritability Emotional Liability (mood swings)	Structured Daily Schedule High Rates of Teacher Praise Appropriate Curriculum Instructional Pacing	Level I	Guidelines for Managing Behavior (TBI Manual)	Must be revised often to reflect student's changing abilities and deficits.
	Precision Commands High Rates of Teacher Praise Differential Reinforcement	Level I	Utah's Behavioral & Educational Strategies for Teachers (BEST) Project	Visual reinforcers may need to be paired with verbal reinforcers; e.g., marble jar.
	Time Out	Level II & III		Time limits used with traditional time outs may not be appropriate for TBI students.
Aggression and Anger	Redirect Training Functional Analysis (TBI Manual)	Level I	Guidelines for Managing Behavior (TBI Manual) Functional Analysis (TBI Manual)	When redirection is not adequate to control repetitive aggression, an ongoing group-training approach may work with a TBI student.
	Time Out	Level II & III	Utah's (BEST)Project	Time limits used with traditional time out may not be appropriate.
	Social Skills Training	Level I		May have to be paired with more concrete reinforcers.
	Response Costs	Level I & II		
Disinhibition and Impulsivity	Differential Reinforcement Structured Schedule Contracting Self Management/Home Notes Staff Training Peer Tutoring	Level I	Guidelines for Managing Behavior (TBI Manual) Utah's (BEST) Project	May need to be paired with concrete reinforcers.
	Time Out	Level II & III		Traditional time limits may not be appropriate.
	Response Cost	Level II & III		May need to be paired with a self-monitoring program for children with memory impairments.

BEHAVIOR	INTERVENTION	LRBI Least Restrictive Behavioral Interventions	RESOURCES	CAUTION for use with TBI
Lack of Motivation Poor Participation	Differential Reinforcement Structured Schedule Home notes Contracting Peer Tutoring Token Economy Public Posting	Level I	Guidelines for Managing Behavior (TBI Manual) Utah's Behavioral & Educational Strategies for Teachers (BEST) Project	Be alert to variations with motivation. Do not expect consistent increase in motivation or participation.
Non-Compliance	Precision Commands	Level I	Utah's (BEST) Project	Keep in mind that confusion or memory deficit may be involved in a TBI student's non-compliance. Visual cues may need to be paired with verbal requests.
	Time Out Response Cost	Level II & III	Utah's BEST) Project	
Poor Social Functioning	Self-Monitoring Social Skills Training Peer Tutoring Contracting Group Contingencies	Level I	Utah's (BEST) Project	A reinforcement delivery program should be incorporated with any cognitive training program. It can be faded out as TBI students become more skilled.
Self-Esteem	Teacher Praise Structured Schedules Home notes Public Posting	Level I	Utah's (BEST) Project	Through the use of behavioral management interventions aimed at re-adapting the TBI student to the classroom, self-esteem will be a by-product of such efforts.
Depression	Self-Monitoring Contracting Peer Support "Active Listening"	Level I	Utah's (BEST) Project Guidelines for Managing Behavior (TBI Manual)	Be aware of variable gains and mood swings. Have a "bad day" plan.

GUIDELINES FOR MANAGING BEHAVIORS

Reprinted with Permission from: An Educator's Manual, National Head Injury Foundation Task Force on Special Education

Behaviors	**Intervention Strategies**
Agitation and Irritability	• Agitation and irritability are usually not purposeful, but more often the result of something else - fatigue, frustration, "bad days" - which are often not recognized by the student. Help the student pinpoint what is wrong and then find ways to cope.
	• When a student becomes agitated/irritated and has an outburst, REDIRECT the student away from the source of frustration. Do not dwell on the outburst or what the student did.
	• During severe outbursts, redirect and reduce the stimulation or frustration by offering the student an alternative action. Take the student for a walk, to the gym, or have the student do something physical to "work it off." If you are trying to give options (choices), give more than two. When you give an either/or you present a challenge.
Aggression	• Students who become aggressive have generally been agitated for a period of time prior to an aggressive display. It is important to know your students well enough to redirect agitated behaviors by heading them off before the student explodes. Keep the student's counselor informed of behavior that you feel could become harmful.
	• Speak very calmly and gently to a student who has become aggressive. Even if the student is screaming, raising your voice will only make matters worse. You need to act as a "role model" for the student-be a calm, caring, and controlled role model.
	• Use key phrases which are familiar to the student to help him/her gain control of the aggressive behaviors. If the student needs to work out physically, take him/her to a gym or some other safe place.
	• If the student's aggressive behavior cannot be controlled and/or threatens the safety of staff or other clients, the teacher needs to follow the school's emergency procedures such as those taught in the MANDT system of managing people
Poor Emotional Control	• Again, the key to handling poor emotional control is the redirect behavior, change the subject/environment, and refocus the student's attention on something positive.
	• Students are often very sensitive to negative criticism and often react strongly if they feel someone is making fun of them. Use humor positively and not as a way to ridicule or embarrass students.
	• Mood swings are common after traumatic brain injury since the brain is having difficulty trying to inhibit impulses and respond properly to emotions. Teachers need to reorient students to positive goals and help them recognize that normal recovery, like life, is full of "ups and downs."
	• With some head injuries, students may lose the ability to feel guilt and empathy. They may use offensive language and become very critical of others. Teachers need to respond to students by saying, "When you talk like that it makes ME feel very uncomfortable" rather than reprimanding the student. Show the students how they might better state what they are feeling in a more positive tone. (Use "I" messages instead of "You" messages.)

Behaviors	Intervention Strategies
Apathetic/Not Caring Attitude	• Give students a choice between doing one thing or another, do not give them a choice between doing something or doing nothing. Keep the students involved with each other, group interaction helps to reduce apathy. • Help the student explore what it is he/she really wants, proceed in small steps, set easy goals, and show the student he/she can succeed. • Structure practice situation so the student can practice perceiving the feelings of others or how to respond appropriately.
Lack of Insight/Denial of Disabilities	• Many students with right hemisphere injuries may not recognize their problems and, hence, deny that they have any. • Speak to the student in terms of "strengths and needs" rather than disabilities or deficits. Try to get the student to verbalize his/her needs rather than just "see" his/her inabilities. • Find the student's strongest learning modality (visual, auditory, tactile) and use this modality to help the student recognize his/her problem areas.
Impulsive Behavior/ Lack of Inhibition	• Students with frontal lobe injuries often feel "out of control" and cannot effectively inhibit impulses. • Staff need to help students better manage their worlds by keeping activities organized and structured. Use calendars, schedules, time clocks, etc. to help students orient to the world around them. • Key words/phrases help students track their behaviors and lessen impulsivity. Merely asking a student "why" he/she did something does not help the person control those actions. • Have students write down their plans as much as possible. Check their daily journals and focus the students on routines to decrease "not knowing what to do next" behaviors.
Secondary Depression and Withdrawal	• While students often have memory problems, they do not generally forget what they wanted "to be" if it had not been for their accident. Hence, depression after a head injury is common for many students. • Teachers need to help students recognize the things they can do rather than what they cannot do. Keep students involved with the "real world" and do not let them slip into the past. • Be an "active listener" for students who need to talk and focus on the positive feelings the student displays. Use caution when dealing with family matters or matters which are very sensitive. However, let the student's counselor know of these situations so they can be addressed in therapy. • If a student becomes suicidal or expresses such, contact the school psychologist and/or counselor and the parents/guardians immediately.

COMMUNICATION ISSUES
RELATED TO TRAUMATIC BRAIN INJURY

Expressive Language Problems

- Most children recover the ability to express at least simple thoughts adequately. Adequate vocabulary and grammar for expressing needs and wants.
- Common expressive impairments include:
  - Weak confrontation naming (ex. showing objection asking "What is this?").
  - Weak word retrieval (spontaneous conversational speech).
- Sharp deterioration in communicative effectiveness with increases in amount of information to be expressed; spoken and written sentence may be adequate, whereas extended descriptions on narratives may be extremely disorganized or lacking in content. May be influenced by complexity of the information to be expressed, time pressure and environmental distraction.

Pragmatic Deficits (social communication problems)

Pragmatic skills are related to:

- Pre-injury personality and communication style.
- Cognitive, behavioral, and social/emotional status after the injury.

Social communication problems often include:

- Difficulty maintaining fluid conversations.
- Inaccurate perception and interpretation of others' utterances and social cues, resulting in communication breakdowns.
- Inadequate understanding of social rules and roles, resulting in inappropriate language.

Speech Problems

- Speech often returns to pre-injury status once patient moves beyond the confused/agitated state of recovery.
- Significant residual speech problems are not common in children with good motoric recovery.
- If speech problems persist, they generally involve some combination of the following characteristics:
  - Oral/verbal apraxia (difficulty coordinating speech movements).

  - Articulatory imprecision (speech sound errors).
  - Phonatory weakness (due to poor respiratory support; possibly combined with upper trunk muscle tightness).
  - Hypernasality, related to inadequate velopharyngeal closure or incoordination (excessive air flow through nose).
  - Monopitch (monotone).
  - Slow rate of speech (talks too slow).
  - Rapid rate of speech/cluttering is occasionally observed, but is less common (talks too fast).

Receptive Language Problems

- Comprehension of conversational speech is often adequate for ordinary purposes.
- Single word comprehension often returns to within normal limits.
- Comprehension often deteriorates sharply with:
  - Increases in rate of speech.
  - Amount of information to be processed.
  - Abstractness of the language/information.
  - Environmental distractions.

Written Language Deficits

- Written text may have numerous grammatical and spelling errors.
- Sentence structure and topic flow may be unorganized.
- Paragraph content may contain irrelevant or unsubstantiated information.
- Student does not use figurative language.

Reading Comprehension

- May be adequate at a sentence level.
- May or may not be adequate at the short-paragraph level.
- Deteriorates sharply at page-or multi-page level.

ASSESSMENT CONSIDERATIONS

Standardized Assessment

NOTE: Standardized speech and language assessments may be used with TBI students, but may over estimate functional language skills.

Standard assessment instruments:

- Focus on the form of language (e.g., phonology, morphology, syntax) and on pre-traumatically acquired content.
- Fail to place adequate stress on language processing abilities.
- Fail to assess ability to learn new information.
- Fail to assess social interactive competence.
- Are administered in a setting that may compensate for attention/concentration problems.
- Are administered in a way that may compensate for difficulties with initiation, inhibition, task orientation.
- Have not been validated for use with TBI students.

Criterion referenced assessment

- Criterion referenced measures such as questionnaires, checklists, problems lists, etc., may be the most valuable methods for obtaining information concerning the student's strengths and weaknesses and for designing appropriate intervention goals.

PRAGMATIC PROTOCOL

(Refer to Definitions on Page 2)

Name: ____________________ Date: ____________

Communicative Setting Observed ______________

Communicative Partner's Relationship ____________

COMMUNICATIVE ACT	APPROPRIATE	INAPPROPRIATE	NO OPPORTUNITY TO OBSERVE
VERBAL ASPECTS			
A. Speech Acts 1. Speech act pair analysis			
2. Variety of speech acts			
B. Topic 1. Selection			
2. Introduction			
3. Maintenance			
4. Change			
C. Turntaking 1. Initiation			
2. Response			
3. Repair/revision			
4. Pause time			
5. Interruption/overlap			
6. Feedback to speakers			
7. Adjacency			
8. Contingency			
9. Quantity/conciseness			
D. Lexical Selection/Use 1. Specificity/accuracy Specifying relationships across speech acts			
2. Cohesion			
E. Stylistic variations 1. The varying of communicative style			

PARALINGUISTIC ASPECTS F. Intelligibility and Prosodics			
1. Intelligibility			
2. Vocal intensity			
3. Vocal quality			
4. Prosody			
5. Fluency			

NONVERBAL ASPECTS G. Kenetics and Proxemics			
1. Physical proximity			
2. Physical contacts			
3. Body posture			
4. Foot/leg and hand/arm movements			
5. Gestures			
6. Facial expression			
7. Eye gaze			

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DEFINITIONS FOR PRAGMATIC PROTOCOL

VERBAL ASPECTS

A. Speech Acts

1. Analyze Speech Act Pair	The ability to take both speaker and listener role appropirate to the context. Directive/compliance-personal need, imperatives, embedded imperatives, permissions, directives, questions directives, hints. Query/response-request for confirmation neutral requests for repetition, requests for specific contituent repetition. Request/response-direct requests, indirect requests, inferred requests, request for clarification, acknowledgment of the request, perform the desired action. Comment/acknowledgment-description of ongoing activities of immediate subsequent activity; of state or condition of objects; persons; naming; acknowledgments which are positive, negative, expletive, indicative.
2. Variety of Speech Acts	The variety of speech acts or what one can do with his/her language such as: comment, assert, request, etc.

B. Topic

1. Selection	The selection of a topic is appropriate to the context.
2. Introduction	Introduction of a new topic in the discourse.
3. Maintenance	Maintenance of topic across the discourse.
4. Change	Change of topic in the discourse.

C. Turntaking

1. Initiation	Initiation of speech acts.
2. Response	The responding as a listener to speech acts.
3. Repair/Revision	The ability to repair a conversation when a break down occurs and the ability to ask for a repair when misunderstanding, ambiguity, etc. has occured.
4. Pause Time	When pause time is excessive or too short between words or in response to a question or between sentences.
5. Interruption/Overlap	Interruptions between speaker and listener; overlap is when two people talk at the same time.
6. Feedback to Speaker	Verbal behavior to give the speaker feedback such as "yea," "really," nonverbal behavior such as head nods up and down, can be positive; side by side can express negative effect or disbelief.
7. Adjacency	Utterances which occur immediately after the partner's utterance.
8. Contingency	Utterances which share the same topic with the preceding utterance and which add information to the prior communicative act.
9. Quantity/Conciseness	The contribution should be as informative as required, but not too informative.

D. Lexical Selection/Use

1.	Specificity/Accuracy Specificity Relationships Across Speech Acts	Lexical items of best fit considering the context.
2.	Cohesion	The recognizable unity or connectedness of text. • References • Subsitution • Ellipsis • Conjunction • Lexical

E. Stylistic Variations

1.	The Varying of Communicative Style	Adaptations used by the speaker under various dyadic conditions; e.g., polite forms, different syntax, vocal quality changes.

PARALINGUISTIC ASPECTS

F. Intelligibility and Prosodics

1.	Intelligibility	The extent to which the message is understood.
2.	Vocal Intensity	The loudness or softness of the message.
3.	Vocal Quality	The resonance and or laryngeal.
4.	Prosody	The intonation and stress patterns of the message; variations of loudness, pitch, and duration.
5.	Fluency	The smoothness, consistency, and rate of the message.

NONVERBAL ASPECTS

G. Kinetics and Proxemics

1.	Physical Proximity	The distance from which speaker and listener sit or stand from one another.
2.	Physical Contacts	The number of times and placement of contacts between speaker and listener.
3.	Body Posture	Forward lean is when the speaker or listener moves away from a 90° angle toward other person; recline is when one party slouches down from waist to head and moves away from the partner; side to side is when a person moves to the right or left.
4.	Foot/Leg Movements	Any movement of foot/leg.
	Hand/Arm Movements	Any movement with hand/arm (touching or moving an object or touching part of the body or clothing).
5.	Gestures	Any movements which support, compliment, or replace verbal behavior.
6.	Facial Expression	A positive expression is when the corners of the mouth are turned upward; negative is downward turn; neutral expression is when face is in a resting position.
7.	Eye Gaze	When one looks directly at the other's facial region; mutual gaze is when both members of the dyad look at the other.

Adapted from Johnson, Weinrich, Johnson; ASourcebook of Pragmatic Activities: Theory and Intervention for Language Therapy (PK-6), 1984.

COMMUNICATION ISSUES

ATTENTION/CONCENTRATION

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Difficulty with attention and concentration.	• Unable to relate information recently read. • Easily distracted during reading assignments. • Unable to complete silent reading and seatwork assignments at the same rate as classmates. • Can't stay focused on the speaker. • Unable to shift from listening to teacher to taking notes. • Unable to copy the spelling words from the chalkboard to paper. • Looses place while reading. • Unable to play with a toy for any length of time. Moves from toy to toy.	° Reduce the amount of work to be done. ° Provide an area with reduced distractions. ° Establish eye contact. ° Be in close proximity of the child to provide regular cluing. ° Provide them with list of words. ° Provide a copy of lecture notes. ° Provide additional time. ° Help the child to explore toy before moving on to the next one.

MEMORY

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Decreased ability to store and retrieve information.	• Unable to recall details. • Unable to recall old learning (pre-injury). • May have difficulty acquiring new learning. • May not be able to retrieve information without a cue.	° Use visual and auditory cues to draw attention to details: highlight, underline, use reference pictures. ° Have the student record information on tape. ° Underline or highlight key words in passages. ° Speak slowly; be clear, concise, concrete. ° Limit sentence length and complexity. ° Pair verbal statements or commands with pictures, demonstrations, or gestures. ° Use written directions. ° REPEAT, REPEAT, REPEAT. ° Provide a multiple choice or match test. ° Verbal rehearsal. ° Memory books.

EXECUTIVE FUNCTIONING

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Difficulty initiating.	• Unable to begin a task (sometimes even when a cue has been provided). • Does not turn in homework. • Does not turn in assignments.	° Review a daily written assignment sheet. List due dates and times. ° Develop a consistent place and routine for turning in work. ° Provide external cues (timer, peer tutor).
Difficulty understanding a sequence of events.	• Gets lost in the daily routine (knowing order, or location of classes).	° Provide written schedule of school routine and a map of the building with classrooms marked in order. ° Provide sequential pictures of steps.
Failure to organize.	• Performs steps out of sequence or fixates on one step. • Written text is disjointed and lacks sequential thought. Stories make no sense.	° Help him/her construct an outline. ° Spidering and webbing.
Decreased ability to plan.	• Does not recognize due dates, or time required to complete class projects.	° Help create a system for maintaining organization. ° Encourage use of a daily activity log, schedules, assignment lists, and due dates. Monitor frequently.
	• Has difficulty getting to class on time.	° Develop cognitive prostheses— wall charts, daily schedules, digital watches, watch alarms, timers, calendars, notebooks, lists, markers, tape recorders, and labels.
	• Does not bring materials to class.	° Use consistent structure for lessons and daily activities. Post a schedule of activities.
	• Difficulty adapting to a change in schedule or routine; such as a field trip.	° Include activities which involve planning trip. Have the student organize an activity (e.g., a party). ° Provide orienting data several times a day. Remind a student of names, places, schedules, and goals. Have student repeat directions that were given for an assignment or for finding another class. ° Inform and remind student of change in routine or schedule ° Use a material checklist.
Inability to analyze or to integrate information.	• Confuses verbal directions; goes to the wrong room.	° Have student cross off steps when completed.
	• Unable to integrate two or more sources for written assignments.	° Simplify the directions and task. ° Assign a hall buddy.
	• Gets stuck on one topic. • Will use a particular word or words/action multiple times.	° Attempt to redirect.

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PROBLEM SOLVING

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Poor problem solving skills. Reduced verbal reasoning ability.	• Unable to avoid problems. • Solutions to situations are not carefully thought out. • Sometimes the student can see the problem but is unable to solve it.	° Ask questions designed to help the student identify the problem, identify the steps to the solution, and implement the plan. ° Teach inductive and deductive reasoning at appropriate age levels.

COMPREHENSION

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Poor comprehension of lengthy or rapid speech.	• Misses details in conversation. • Has poor note taking skills because he/she misses important information.	° Check frequently for understanding of message. ° Use short, simple sentences, emphasizing key points by voice variations, intonations, etc. ° Alert the student to the important topics being discussed.
Decreased ability to generalize learned information to new and/or different situations.	• Cannot recall or generalize information presented in class.	° Teach memory strategies: categorize, associate, rehearse, chunk information. ° Rhyme words to help remember them. Make a word using the first letter of each word in a series that needs remembering (e.g., HOMES-Lakes Huron, Ontario, Michigan, Erie and Superior). ° Rehearse verbally; practice visual imagery. ° Assign a student buddy to take notes or to monitor and check what has been written. ° Teach to students strongest modality.
	• Is unable to take tests where newly learned information must be applied or generated.	° Stress similarities. Provide a variety of examples of the topic.
Reduced ability to understand abstract language.	• Misunderstands instructions and comments made. Does not understand humor or figurative language.	° Use concrete/simple language when presenting important information or correcting behavior. ° Teach the meaning of idioms, figurative language, ambiguous phrases, etc.

WORD RETRIEVAL - VOCABULARY

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Word retrieval errors.	• Use "this," "that," "those things," "whatchamacallits." • Individual knows the word they want to say but can't get it out. • Mislabels common objects, tools, materials, etc.	° Teach association skills. ° Encourage definitions or descriptions of words which cannot be recalled. ° Use semantic mapping or webbing techniques. ° Teach memory strategies (e.g., rehearsal and visualization, etc.) ° Encourage word retrieval. Use phonemic cueing and you start to say the word and/or descriptions (e.g., "Can you describe it?") ° Teach vocabulary associated with specific subject areas and classroom activities.

WRITTEN LANGUAGE

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Structure and content of the writing may not be of the same skill level as pre-injury.	• Has numerous grammatical and spelling errors in essays. • Uses incorrect and unorganized sentence structure. • Does not use figurative language; writing contains irrelevant or unsubstantial information.	° Give the student time to go over written work with a partner or teacher aide to find and correct errors. ° Teach vocabulary, grammar, and proof-reading skills. ° Allow the student to verbally state ideas, tape record, or write from dictation. ° Use "question cards" to indicate the specific issues to be addressed in written assignments. ° Teach to current level of ability. ° Allow student to utilize Franklin spellers.

READING COMPREHENSION

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Deficit in comprehension of written text.	• Students may pick up on the general ideas, but miss important details. • Students are able to decode words and sentences fluently but are unable to tell you what they just read.	° Encourage them to reread for misinformation. ° Teach them to outline the material. ° Have them review verbally with you what they have read. ° Be sensitive to the length of the text you are asking them to comprehend.

PRAGMATICS:

The use of appropriate language in context as a tool for communication

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Easily over-loaded.	• Appears to be daydreaming or nonresponsive.	° Focus attention. ° Pause frequently. ° Give time for processing information. ° Use short, simple sentences.
Inability to read nonverbal cues.	• Unaware that the teacher or other classmates do not want to be bothered while working. • Interrupts others.	° Increase social awareness. Use preestablished nonverbal cues to alert the student that his/her behavior is not appropriate. Discuss.
Verbally aggressive.	• Interrupts conversations.	° Teach good listening techniques. ° Have the student concentrate on the comments of others. ° Give nonverbal cues to discontinue interruptive behaviors.
Communication in informal situations differs from formal situations such as the classroom.	• Answers questions at a surface level; unable to provide detailed explanation. • Converses well in social situations; conversation in classroom lacks depth.	° Encourage conversations to develop by giving instructions such as "Tell me more;" "How many did you see?" ° Role-play formal conversations in small groups. ° Direct responses with verbal models, cues, and leading questions.

PRAGMATICS: BODY LANGUAGE

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Unable to use appropriate facial expressions and gestures that match the spoken communication.	• Unable to use appropriate eye contact. • Unable to take turns vocally. • Unable to understand both verbal and non-verbal messages. • Unable to give compatible verbal and non-verbal messages. • Unable to use appropriate prosody (suprasegmentals). • Unable to understand the parameters of personal space.	° We have kinesics (body motions) and proxemic (use of space) expectations that are defined by culture and language family. ° For younger ages, this can best be done by motoric manipulation and modeling of the accompanying language. ° Practice and role-play are appropriate therapy tools.

PRAGMATICS: CONVERSATIONAL ABILITY

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Unable to understand that conversation is a two- (or more-) way street where talking and listening skills are used appropriately.	• Unable to initiate and terminate a conversation. Unable to begin and end a sentence.	Provide experiences so student will have content for conversations. ° Teach initiation/termination of conversation with a variety of skills in the experience or practice activities, including the entire range of eye contact, verbal turn-taking, and topicalization abilities.
	• Unable to listen to the speaker. • Unable to acknowledge other participants in an interaction. • Talks at inappropriate times. • Unable to take a turn at an appropriate time in the conversation. • Difficulty asking and/or answering questions. • Difficulty responding when called upon.	° Teach the steps of: 1) Listening to the speaker. 2) Volunteering to talk at appropriate times. 3) Responding when called upon, with modeling, prompts, immediate feedback.
	• Unable to use discourse connectors.	° Teach the use of discourse connectors by explaining how little words connect phrases and then practicing their use, example: "Sometimes we can change the subject by using small words to connect thoughts together. I could say 'I enjoy the movie, oh by the way, did you see... how you practice changing the subject with me.' "

PRAGMATICS: TOPICALIZATION SKILLS

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Expressive topicalization: deficits, the ability to establish specific topics that others can recognize.	• Unable to establish a topic and make appropriate comments.	° Encourage student to establish topic; make comments, stay on topic for appropriate number of utterance.
Receptive topicalization: deficits, the ability to identify and follow the topic of others during conversational exchange.	• Cannot maintain topic consistency.	° Role-play situation with puppets. This encourages students to stay on topic by staying in character.
	• Does not signal a change of a topic.	° Signal change of topic by providing another "toy."
	• Unable to terminate topic appropriately.	° Practice what can be said when you are finished: Talking about your pet—"I'm finished telling about this pet."
		Key Points: ° Place child in a position to practice chosen topicalization skills. ° Provide appropriate feedback to let child know how well the goal is being met. Enable the child to I.D. correct behavior, practice, and internalize behaviors. ° Steer irrelevant comments back to topic. ° Establish conversation rules: 1. You must remain on topic. 2. You cannot interrupt. 3. Everyone gets a turn. 4. Everyone must be polite.

PRAGMATICS: SYNTACTIC SEMANTIC FORMS CONVEYING PRAGMATIC INFORMATION

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Unable to use grammatic tools and semantic skills suitable to the conversation.	• Unable to use all modalities (declarative, imperative, negative, and interrogative). • Unable to use grammar appropriate for the context.	° At all levels, expansion is main technique that should be used to expand grammar from lowest levels, where error occurs, to the highest ones in a progressive hierarchical way (i.e., Him playing in the yard-He is playing in the yard. Where are we going- no question inflection at end).
	• Unable to delete redundant information. • Unable to use referents appropriately in conversation. • Unable to use appropriate discourse connectors. • Unable to use pronouns, articles, relative clauses, and adjectives to signal old and new information.	° Prompt the student who is giving directions to delete redundant information and to signal which information is new.

PRAGMATICS: VOCAL INFLECTION/REGISTER

DEFICITS	BEHAVIOR	TEACHING STRATEGY
Inability to appropriately use vocal inflection.	• Unable to use language appropriate to the context. • Unable to use intonation and stress appropriately.	◦ Student must realize there are different ways to talk to different people and that they expect to be spoken to in these expected ways, or the interaction will not be satisfying. Have student choose from a number of registers in their repertoires—practice prosody and feedback. ◦ Older children should examine examples of failed communication.

SPEED OF RESPONSE

DEFICIT	BEHAVIOR	TEACHING STRATEGY
Delayed responses.	• Does not answer immediately; appears not to know the answer.	◦ Allow extra time to process and formulate a response. ◦ Avoid asking too many questions. ◦ Give advance notice of questions; allow time to prepare answers. ◦ Phrase questions to allow choice of answer.

General Principles of Intervention by Ylvisaker

It is our conviction that adherence to these principles in cognitive rehabilitation serves patient's ultimate goal: effective and independent performance of meaningful functional-integrative activities in a setting that is as normal as possible.

Principle 1: Success, which results from controlling the difficulty of tasks, appropriately adjusting performance expectations, and compensating for deficits, both facilitates patient's progress and builds a productive self concept. In designing therapy tasks, clinicians must be respectful of the patient's age and status in the family and community, but must also create an atmosphere that assures the patient that it is both understood and expected that some very basic abilities may be missing and that some very basic knowledge may be inaccessible. Many of our patients have confided that they are troubled when friends and relatives assume they have recovered more of their pre-traumatic knowledge and abilities than they actually have. Patients in this situation tend to be easily embarrassed, and they become reluctant to ask for information or help.

Principle 2: A systematic graduation of activities involving progressive increases in cognitive demands can facilitate cognitive recovery. Demands are gradually increased in the areas of efficiency, level, scope, and manner of performance with the objective of enabling a patient to function independently under conditions of real-life stress. During this process, responsibility for controlling the difficulty level of tasks is moved from clinician to patient. *Efficiency* is the *rate* at which performance occurs (which includes receiving and comprehending information); i.e., the *amount* that is accomplished in a *time* period in relation to some standard of quality of the performance. *Level* is the developmental, academic, or vocational level of an activity as it is measured on scales such as: simple to complex, concrete to abstract, low to high language level, early to late grade level. *Scope* refers to the variety of situations in which a performance level can be maintained (e.g., familiar or unfamiliar, structured or unstructured, quiet or noisy). A patient's scope of performance is often restricted following head injury because of problems in generalization. *Manner* refers to the characteristic style or way a task is performed, such as impulsive or reflective, flexible or rigid, dependent (needing cues) or independent, and active or passive.

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Principle 3: Habituation and generalization training are necessary for meaningful learning. Many trials are often necessary to make a patient's use of cognitive skills or strategies automatic. It may be necessary to train a patient in a variety of settings and under a variety of conditions to promote generalization. Instructing a patient in how to transfer a skill from one situation to another may also be necessary.

Principle 4: It is essential to patients' motivation and independence that clinicians encourage them to take the initiative in setting goals, planning treatment activities and solving problems. The ability to see meaningful connections between treatment activities and personal goals presupposes some understanding of current deficits. Patients who fail to see these connections are unlikely to profit from these activities. Patients who become accustomed to yielding control over goals and activities to clinicians, family members, or others reduce their chances for successful community re-entry.

Principle 5: A patient's orientation, learning, and generalization are facilitated when the patient's family and the rehabilitation staff have similar expectations of performance and make consistent and similar demands on the patient. Treatment approaches that are inconsistent or not adequately integrated compound the already sizable generalization problem that brain injured individuals have. This principle is a strong rationale for interdisciplinary programming and for the use of printed forms or diagrams that represent the thinking procedures or strategies that the patient is learning. These forms structure not only the patient's thinking but also that of the clinicians.

Principle 6: Chronological age; pre-traumatic social, educational, and vocational status; and current developmental level of cognitive functioning must all be considered in designing tasks. It is possible to design therapy tasks that use interesting or vocationally meaningful adult-level materials and activities, but that make only low-level cognitive demands.

Principle 7: Group therapy is a useful context for developing patients' social cognition and interactive skills and for increasing their understanding of head injury and its consequences. Individual therapy is generally necessary for very specific problems. Head injured patients profit from the support and feedback of peers, from peer modeling, and from peer encouragement. At the same time, a solid relationship with a clinician, which can be developed in individual sessions, is often the foundation patients need to face more threatening social situations.

COLLABORATIVE PROBLEM-SOLVING WORKSHEET

I. Problem Definition

A. Identify component parts.

B. Prioritize component parts.

C. Define the problem, focusing on one component part. (Make sure the definition is clear, objective, and concrete.)

D. State short-term and/or long-term goals.

E. Determine data collection procedures.

II. Problem Analysis

A. Setting (where does the problem occur?).

B. Participants (who is involved?).

C. Strength (e.g., how frequent, intense, severe?).

D. Conditions Analysis.

   1. Antecedents (e.g., What factors precede the problem? What prerequisite skills are necessary to perform at the desired level?).

   2. Consequences (e.g., What typically follows the problem? What are the reactions of students, teachers, parents?).

   3. Situational (e.g., What else is occurring at the time of the problem? What patterns are noticed, such as common times, subject areas, etc.?).

E. Resources available to contribute to problem solution.

III. Plan Development and Implementation

A. Brainstorm alternative solutions.

Alternative Solutions **Possible Consequences**

B. Identify chosen alternative.

C. Develop management plan.

	Program Steps	Who	What	When	Where	Desired Outcome
1.						
2.						
3.						
4.						
5.						
6.						

IV. Plan Evaluation

A. Review steps, desired and obtained outcomes, and determine necessary revisions and responsibilities.

B. Specify follow-up procedures.

POTENTIAL DEFICITS IN THE TBI STUDENT

I. MOTOR DEFICITS

TBI students may have received devastating physical injuries that will greatly impact their existing cognitive abilities and subsequent school performance. Disabilities with vision, hearing, walking, balance, and use of hands are examples.

______ **Perceptual Motor**

1. Visual neglect.
2. Visual field cuts.
3. Motor apraxia.
4. Motor speed.
5. Motor sequencing.

Visual/auditory processing deficits may present difficulty in interpretation of information. An individual may have difficulty with recognition of objects or faces. They may be unable to pick out visual detail or discriminate features of objects. Hand-eye coordination may also be disrupted. Space and distance judgment may be impaired.

______ **Spatial Orientation**

______ **Eye-Hand Coordination**

______ **Balance**

______ **Vision**

______ **Hearing**

______ **Strength**

______ **Mobility**

II. COGNITIVE DEFICITS

Cognitive deficits have been found to be more persistent than sensory and motor disorders and generally produce greater social and academic consequences. (Begali, 1992)

______ **Memory**

Memory deficits are the most common complaint of individuals who have suffered brain injury. Memory ability may gradually improve over time. Most individuals with severe brain injuries suffer some degree of memory impairment even two years following injury. Memory deficits greatly impair the learning of new information.

______ **Knowledge Base (long-term memory)**

Is the permanent memory record or store of knowledge. It contains memories of personal experiences; general information: learned skills or routines; and knowledge of concepts, words, rules, strategies, and procedures; organizational principles; knowledge of frames; abstracted life scripts; goals; and self-concept. The system is thought to be highly organized with multiple connections among related concepts (Ylvisaker. p. 101).

______ **Working Memory (short-term memory)**

Working memory is what makes it possible for students to learn new information. This may affect their ability to hold several words, thoughts, or intentions in mind at one time. A student with a disability in working memory may be unable to follow a two-or three-step command.

______ **Attention and Concentration**

Attention/concentration deficits are manifested in an inability to sustain attention while carrying out a task. Attention/concentration represent a basic level of thinking. Disruption of this process may negatively impact all other areas of cognition.

______ **Organizational Skills**

Organization deficits can broadly impact every aspect of the individual's daily living. They may have difficulty analyzing a task into smaller components. They may have problems in organizing information into larger units.

______ **Reasoning and Judgment**

Reasoning/judgment problems will cause an individual to experience difficulty in analyzing and synthesizing information.

Executive Function Deficits:

______ *Problems of starting* -decreased spontaneity and initiation. Such individuals may sit silently without apparent interest or curiosity about surroundings until they are directed to do something. Students with initiating problems may appear unmotivated and are easily categorized by teachers as resistive or as behavior problems. Impairment of any or all of these abilities may be present in spite of strong intellectual skills and apparently unaffected language function.

______ *Difficulties in making mental or behavioral shifts* - rigidity or perseveration on a single idea or a single action. Individuals may be able to formulate a plan and yet be unable to put it into effective action.

______ *Difficulties with attention* - "captured" by extraneous aspects of a task. Because they may be highly distractible, they often seem to shift focus continually, never arriving at a point which seems purposeful.

______ *Problems in stopping* - may appear as a deficit in self-monitoring. It may present as impulsivity, easily angered, speaking too loudly, or carrying sexual innuendoes too far.

______ *Problems with social awareness* - unaware of others and their needs; lack of concern for accepted social conventions. They can present with rude or insensitive behavior.

______ *Deficient self-awareness* - defective self-criticism may be associated with a tendency to be self-satisfied, to experience little or no anxiety, and to have limited insight into the effects of their behavior.

______ *A concrete attitude* - they display an inability to see the gray areas of life. They take things too literally.

______ **Thought Processes**
There is usually an overall slowing in mental processing such that an individual takes longer to think and respond than prior to the injury.

______ **Conceptual Skills**

______ **Problem Solving**

______ **Inability to Adjust to Change** (functions better with predictable routines).

III. BEHAVIOR/SOCIAL DEFICITS

_______ **Social Skills**

Attention seeking.
Social cues, poor judgment.
Learning from peers.
Learning in social situations.
Distraction in noisy settings.
Immaturity (behaves much younger).
Withdrawal.
Dependency.
Poor participation.
Inappropriate sexual behavior.

_______ **Behavioral**

Distractibility.
Irritability - complaining, belligerent, disruptive.
Impulsivity.
Hyperactivity.
Anger outbursts.
Tantrums.
Hostility.
Violence.
Non-compliance.
Rigidity.
Poor motivation.
Denial, lack of insight.
Apathy.
Tactile defensiveness.
Habit disorders.
Depression:

- Grieving over memories of pre-morbid skills.
- General depression in many forms.

_______ **Self-Care Skills**

Not eating/impulsive eating.
Poor toileting.
Dressing.
Grooming and appearance.
Staying safe in unsupervised settings.
Getting lost:

- Unfamiliar and familiar surroundings.

IV. COMMUNICATION DEFICITS

Communication disorders are another frequent finding following brain injury. Often, individuals have speech disorders that are motorically based, rendering their speech difficult to understand. Language problems may be presented with an inability to recall words or in an inability to construct complex sentences. Verbal reasoning and auditory comprehension are often impaired. The speed and ease of verbal production, reading comprehension, and writing are sensitive to effects of TBI.

______ **Articulation/Speech Intelligibility**

______ **Auditory Comprehension**

______ **Word Finding** (anomia)

______ **Reading**

______ **Writing**

______ **Abstraction**

______ **Pragmatics**

______ **Aphasia**

______ **Repetitive Speech/Perserveration** (topic selection, topic maintenance).

______ **Poor Conversation Skills/ Poor Turn Taking**

______ **Prosody** (intonation, stress patterns of the message, variations of loudness and pitch).

______ **Non-Verbal Aspects** (physical proximity, gestures, facial expression, eye gaze).

Team

Building

Immediately

TEAM APPROACH OH-5

CASE STUDY

Name of Student: Kris
Date of Birth: January 9, 1984
Grade: Fourth
School: Snoopy Elementary
Date of Injury: August 28, 1993
Date of Team Meeting: Today

Kris was struck by a car during the final week of her third grade year. She received a left frontal contusion and small right occipital contre-coup contusion. Her mother was also injured in the accident and admitted to an adjacent medical facility.

Kris was discharged following three months of hospitalization and rehabilitation. At the time of discharge, Kris was only able to carry on a limited conversation. She spoke slowly, softly, and cautiously with obvious difficulty searching for the exact words she wanted to say. She frequently misunderstood questions and verbal directions.

Fine motor deficits and fatigue limited her ability to write and draw. She clutched a favorite doll with her right hand to avoid having to use it to write or to feed herself. She was ambulatory but walked with an awkward gait.

Kris had difficulty recalling names of nurses, visitors, and extended family members. She was somewhat disoriented as to the present and confused over past events.

Cognitively, Kris functioned at the mentally impaired level on both verbal and performance tasks. Her academic skills were inconsistent and ranged from ending kindergarten to early second grade.

Socially Kris tended to withdraw when she was with a group of peers.

Emotionally she appeared to feel overwhelmed, confused, anxious, and agitated.

Kris was on a prophylactic dosage of Tegretol.

It is important to note that before the accident, Kris reached her developmental milestones within normal limits. Her motor coordination appeared advanced. She was studying ballet prior to the accident. Kris' academic records indicated that she had consistently earned As and Bs in school.

SMALL GROUP WORKSHEET

Instructions: You are a team of professionals about to receive a new student who has sustained a traumatic brain injury. Use this sheet to develop a transdisciplinary program.

Student's Name: ______________________________

Date of Birth: __________ Date of Team Meeting: __________

Date of Injury: __________ Grade: ____ School: ____________________

I. OVERVIEW: (Pick out major points from case study and list briefly.)

II. MEDICAL: (State where the student is medically and list any questions you as a school team may need to ask the hospital case manager.)

CONSIDERATIONS:

Gather information on:

1. The severity and location of injuries to the brain, internal organs, fractures, etc.
2. Anticipated/expected deficits due to the injuries.
3. Medications: effects/side effects.
4. Future medical needs (e.g., surgery-cosmetic/orthopedic).

MEDICAL GOALS: (These goals would be medical in nature and not the responsibility of the educational team, but the team needs to know about doctor appointments, medication changes, etc.)

III. **PHYSICAL SKILLS AND DAILY LIVING SKILLS:** (State where the student is from the perspective of a physical therapist, occupational therapist, and adaptive physical education specialist. Briefly describe student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. What adaptive equipment may be necessary?
2. What environmental modifications may be needed?
3. What daily living skills are impaired?

PHYSICAL SKILLS AND DAILY LIVING SKILLS GOALS: (Include evaluation procedures.)

IV. **COGNITIVE**: (Briefly describe the student's cognitive deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. How does the student's current performance compare to pre-injury skill levels.
2. What combination of direct retraining and/or compensatory skill training will be necessary to reach the student's goals.

COGNITIVE GOALS AND ACTIVITIES: (Include evaluation procedures.)

V. **BEHAVIOR/PSYCHOSOCIAL**: (Brief description of a student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. Individual or group counseling?
2. Does there need to be peer education and/or environmental accommodation to maintain/develop friendships (e.g., Study Buddy and Peer Tutor)?

BEHAVIORAL GOALS AND ACTIVITIES: (Include evaluation procedures.)

VI. **COMMUNICATION**: (Brief description of the student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. How did the injury affect reading, writing, auditory comprehension, expressive language skills?

COMMUNICATION GOALS AND ACTIVITIES: (Include evaluation procedures.)

VII. OTHER PROGRAMMING CONSIDERATIONS: (504, Sp. Ed. Placement)

YEARLY MONITORING

CASE STUDY

Name of Student: Denise
Date of Birth: April 22, 1976
Grade: 12th
School: Sky High
Date of Injury: March 24, 1993
Date of Team Meeting: August 28, 1993

Denise is a seventeen-year-old who was the front seat, unrestrained, passenger in a motor vehicle accident. She was comatose for fifteen days and experienced post-traumatic amnesia for several weeks. She substained the following injuries: left basilar skull fracture, left brain stem contusion, three broken ribs, a punctured lung, and fractured left pelvis.

Denise was hospitialized for two months after which time she was transferred to a Community and Home program.

Currently Denise is medically stable. Her current medication management consists of Tylenol for headache relief.

She demonstrates functional ambulation on all terrains. However, she displays a decrease in physical strength and endurance. Premorbidly Denise was physically active and maintained a level of physical fitness.

Denise is able to articulate in basic functional conversation. However, she is noted to perseverate in her communication. She also displays impaired writing skills and impaired comprehension.

Denise displays serious cognitive impairments which affect her ability to return to her previous lifestyle. The major area of concern is her extremely decreased recent memory abilities. Also, noted is impairment of intermediate and remote memories. She also demonstrates a decrease in problem-solving skills, decreased attention and impulsivity.

She is independent with regard to dressing, grooming, and bathing but lacks initiation towards these activities. She is unable to access the community independently.

Prior to the accident, Denise demonstrated above average performance on achievement and aptitude tests. However, her classroom performance was inconsistent. She earned A & B grades in some classes and D & F grades in others. At the beginning of the 11th grade, she transferred from a traditional school program to an alternative p.m. program.

Denise currently lives with her mother, stepfather, an older brother, a younger brother, and a younger sister who is hearing impaired and has an attention deficit. Before the injury, Denise was described as being moody and aggressive. She is now described as depressed and anxious, confused, and agitated when stressed.

SMALL GROUP WORKSHEET

Instructions: You are a team of professionals about to receive a new student who has sustained a traumatic brain injury. Use this sheet to develop a transdisciplinary program.

Student's Name: ______________________________

Date of Birth: __________ Date of Team Meeting: __________

Date of Injury: __________ Grade: _____ School: __________________

I. **OVERVIEW**: (Pick out major points from case study and list briefly.)

II. **MEDICAL**: (State where the student is medically and list any questions you as a school team may need to ask the hospital case manager.)

CONSIDERATIONS:

Gather information on:

1. The severity and location of injuries to the brain, internal organs, fractures, etc.
2. Anticipated/expected deficits due to the injuries.
3. Medications: effects/side effects.
4. Future medical needs (e.g., surgery-cosmetic/orthopedic).

MEDICAL GOALS: (These goals would be medical in nature and not the responsibility of the educational team, but the team needs to know about doctor appointments, medication changes, etc.)

III. **PHYSICAL SKILLS AND DAILY LIVING SKILLS:** (State where the student is from the perspective of a physical therapist, occupational therapist, and adaptive physical education specialist. Briefly describe student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:
1. What adaptive equipment may be necessary?
2. What environmental modifications may be needed?
3. What daily living skills are impaired?

PHYSICAL SKILLS AND DAILY LIVING SKILLS GOALS: (Include evaluation procedures.)

IV. **COGNITIVE**: (Briefly describe the student's cognitive deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:
1. How does the student's current performance compare to pre-injury skill levels.
2. What combination of direct retraining and/or compensatory skill training will be necessary to reach the student's goals.

COGNITIVE GOALS AND ACTIVITIES: (Include evaluation procedures.)

V. **BEHAVIOR/PSYCHOSOCIAL**: (Brief description of a student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. Individual or group counseling?
2. Does there need to be peer education and/or environmental accommodation to maintain/develop friendships (e.g., Study Buddy and Peer Tutor)?

BEHAVIORAL GOALS AND ACTIVITIES: (Include evaluation procedures.)

VI. **COMMUNICATION**: (Brief description of the student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. How did the injury affect reading, writing, auditory comprehension, expressive language skills?

COMMUNICATION GOALS AND ACTIVITIES: (Include evaluation procedures.)

VII. OTHER PROGRAMMING CONSIDERATIONS: (504, Sp. Ed. Placement)

YEARLY MONITORING

SMALL GROUP WORKSHEET

Instructions: You are a team of professionals about to receive a new student who has sustained a traumatic brain injury. Use this sheet to develop a transdisciplinary program.

Student's Name: ______________________________

Date of Birth: __________ Date of Team Meeting: __________

Date of Injury: __________ Grade: ____ School: ____________________

I. **OVERVIEW**: (Pick out major points from case study and list briefly.)

II. **MEDICAL**: (State where the student is medically and list any questions you as a school team may need to ask the hospital case manager.)

CONSIDERATIONS:

Gather information on:

1. The severity and location of injuries to the brain, internal organs, fractures, etc.
2. Anticipated/expected deficits due to the injuries.
3. Medications: effects/side effects.
4. Future medical needs (e.g., surgery-cosmetic/orthopedic).

MEDICAL GOALS: (These goals would be medical in nature and not the responsibility of the educational team, but the team needs to know about doctor appointments, medication changes, etc.)

III. **PHYSICAL SKILLS AND DAILY LIVING SKILLS:** (State where the student is from the perspective of a physical therapist, occupational therapist, and adaptive physical education specialist. Briefly describe student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. What adaptive equipment may be necessary?
2. What environmental modifications may be needed?
3. What daily living skills are impaired?

PHYSICAL SKILLS AND DAILY LIVING SKILLS GOALS: (Include evaluation procedures.)

IV. **COGNITIVE:** (Briefly describe the student's cognitive deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. How does the student's current performance compare to pre-injury skill levels.
2. What combination of direct retraining and/or compensatory skill training will be necessary to reach the student's goals.

COGNITIVE GOALS AND ACTIVITIES: (Include evaluation procedures.)

V. **BEHAVIOR/PSYCHOSOCIAL:** (Brief description of a student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. Individual or group counseling?
2. Does there need to be peer education and/or environmental accommodation to maintain/develop friendships (e.g., Study Buddy and Peer Tutor) ?

BEHAVIORAL GOALS AND ACTIVITIES: (Include evaluation procedures.)

VI. **COMMUNICATION:** (Brief description of the student's deficits; list questions that need clarification or elaboration.)

CONSIDERATIONS:

1. How did the injury affect reading, writing, auditory comprehension, expressive language skills?

COMMUNICATION GOALS AND ACTIVITIES: (Include evaluation procedures.)

VII. OTHER PROGRAMMING CONSIDERATIONS: (504, Sp. Ed. Placement)

YEARLY MONITORING

UNIT 4

THE TRANSITION PROCESS

OBJECTIVES FOR TRANSITION

1. Describe the two levels of service in assessing students for postsecondary training.

2. List eligibility requirements and post-secondary options available for TBI students.

3. Describe the IEP process as it applies to transition.

4. Describe the curriculum components that help prepare a student for transition.

5. Develop a procedure for evaluating the transition program including the components:
    - IEP Process
    - Assessment Procedures
    - Curriculum

INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA)

Defintion of Transition

"...."transition services" means a coordinated set of activities for a student, designed within an outcome-oriented process, that promotes movement from school to post-school activities, including postsecondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.... The coordinated set of activities...must Be based on the individual student's needs, taking into account the student's preferences and interestes."

Transition Services Required

- IEPs of all children with disabilites must include a "statement of the needed transition services; beginning at age 16 and annually thereafter.
- If determined appropriate, transition services should begin at age 14 or younger.
- A statement of needed transition services in the IEP of each student must include the areas of instruction, community experiences, and the development of employment or other post-school adult living objectives.
- Any one of the above areas could be excluded if the IEP team determine that services are not needed. However, the IEP must inlcude a statement that the specific service is not needed and the basis upon which the IEP team is making that determination.
- The school shall invite the student to attend. If the student does not attend, the agency must take other steps to ensure that the student's preferences and interests are considered.
- The agency shall invite a representative of any agency likely to be responsible for providing future transition services. A statement of each agency's agreed upon responsibilities or linkages which need to occur before the student leaves the school setting must be included.
- If the agency(s) fail to follow through on services agreed to in the transition plan, the school must reconvene the IEP team to identify alternative strategies to meet the transition objectives.

STUDENTS RECEIVING POSTSECONDARY TRAINING (1987-1992)

ATTENDING	SPECIAL ED	NON-DISABLED
Vocational or trade school	8%	10%
2-year college	6%	18%
4-year college	2%	28%
Any postsecondary institution	16%	56%

TRANSITION OH-2

GENERAL TRENDS

Students who:	Utah Study 1990-91*	National Longitudinal Study 1985-86**
Graduated with a diploma	57%	56%
Dropped out	33%	36%
Received vocational training in high school	51%	65%
Were employed during school years	80%	56%
Were employed at time of survey:		
Graduates	63%	55%
Dropouts	53%	40%
Average hourly wage	$5.55	$4.35
Are pursuing some type of continuing ed/training:		
Graduates	23%	21%
Dropouts	12%	5%
Are living at home after leaving school	69%	89%
Are living independently after leaving school	28%	11%
Applied for vocational rehabilitation services	8%	14%
Have been arrested since leaving school:		
Graduates	8%	8%
Dropouts	33%	40%

* Richard Baer, Ph.D., One Year Follow Up of Utah Students Exiting Special Education in 1990-91, 1992.

** SRI International, Special Educator Outcomes, 1992.

TRANSITION OH-3

QUESTIONS WE MUST ASK

1. Concerning the student's specific interests and skills:
   a. What does the student want to do?
   b. What skills does the student already have?
   c. What skills can the student develop?
   d. What limitations may hinder the development of effective on-the-job skills?

2. Concerning options/eligibility requirements:
   a. What options/eligibility factors apply to this student?
   b. How do we access these options?

3. Concerning transition:
   a. How do we prepare students for successful transition?
   b. What adaptations can we make to the curriculum?

TRANSITION OH-4

TRANSITION SERVICES AND THE IEP

Beth Goodman and Sheila Iseman have written an article titled TRANSITION SERVICES: Developing and Implementing IEPs For Life After School (1992). The following excerpts will assist in understanding the types of transition services that should be made available, how these services should be described in the IEP and the basic transition process.

What Are Transition Services?

A wide range of services is needed to provide the foundation for transition of secondary students with a variety of disabilities to postsecondary education, vocational rehabilitation, continuing education, competitive or sheltered employment, independent living and other adult services. In short, *transition services are those services needed to enable the student to succeed in targeted adult environments.*

Thus, in order to identify appropriate transition services, it is first necessary to identify appropriate adult environments. The range of possible environments, with indications of appropriate populations and services needed for successful transition, includes:

1. *Postsecondary Education*
   a. *College or University*

While a few mildly impaired high school graduates— generally those with learning disabilities—are able to enter colleges or universities with no supportive services, most students with disabilities require modifications in the physical and/or academic environment. Possible services and accommodations include: physical accessibility, medical monitoring, speech and language therapy, tutoring and writing clinics.

In general, most colleges and universities publish information about their services, but it takes an experienced counselor to know which school's services really are readily available and which schools actually train their teaching staff to work effectively with the disabled.

During secondary school, the student must learn to become a self-advocate, familiar with his or her strengths and special needs and able to seek solutions to problems as they arise. High school, then, becomes a time when students come to know themselves and investigate the most suitable postsecondary settings. College-bound students should be enrolled both in career courses and social skills classes and, more importantly, must be given guided opportunities to practice learned skills.

Additionally, this group of students— who will face a large volume of work on a daily basis— must become facile with the computer. Ideally, the secondary student will master the computer with ease sufficient to make a laptop useful in the dorm, in class, and in the library. The computer is also a useful tool for planning, organization and self-monitoring progress. Note-taking for the student with graphomotor, auditory processing and/or writing disabilities may be a problem surmountable only through the use of technology.

b. *Pre-College*

Many high school graduates, while not ready to enter college, are now entering non-credit-earning pre-colleges, designed to prepare the student for entrance into specific (usually affiliated) colleges or universities. This relatively new option grew rapidly, but recently has been affected by budget cuts. To date, these programs are more available to those who can afford relatively high tuitions, while programs at local, less-expensive schools are scarce.

Hearing-impaired students may enter Gallaudet's pre-college, while students with learning disabilities may attend Landmark or Boston University's pre-colleges. Length of stay prior to college admission varies as do the specific requirements. Preparation for this type of school is similar to that for the college or university.

Major goals must include: self-advocacy, career courses, social skills classes, and the use of technology. During the later high school years, the program must provide opportunities for investigation of prospective programs. This may include extended visits, tours, speakers, and written documentation.

c. *Vocational Schools*

In general, most secondary schools for students with disabilities fall into two categories, one of which is highly academic and the other has a vocational emphasis, generally offering exposure to several vocations rather than in-depth preparation for a specific career. For many students, the curriculum is heavily weighed towards acquisition of skills for daily living.

Students considering vocational education must have ample opportunity to investigate their interests, talents, and options. The high school career course should, and often does, include interest and aptitude testing as well as opportunities to take part in one or more internships or guided field experiences. Goals for these students often include: developing realistic career expectations, organizational skills and skills for independent living.

2. *Vocational Rehabilitation*

Perhaps the two most significant components of vocational rehabilitation are skills for daily living and vocational training. Populations served vary from those having congenital disabilities (such as developmental disability) and acquired disabilities (such as head injury). For most disabled young adults, there also must be a component that focuses upon the acquisition of cognitive skills.

3. *Independent Living*

While many high schools for the disabled emphasize skills of daily living, students most often graduate without the skills necessary to function on their own as independent members of the community. Programs for vocational rehabilitation concentrate on those skills without which the client could not function independently.

These high school graduates must learn to: take public transportation, balance their checkbooks, plan and follow budgets, get along with peers and authority figures, obtain driver's licenses, seek assistance from appropriate organizations, and shop for food, clothing and other necessities.

Many secondary students in more academic programs are never exposed to these pragmatic activities as part of their curriculum. Others, in more vocational programs, have sufficient difficulty in generalizing to necessitate reintroduction of these skills as the settings change. The secondary student, for whom independent living is a real possibility, should have goals and objectives on the IEP that reflect the need to acquire these skills.

4. *Vocational Training*

Vocational rehabilitation may include: interest inventories, career assessments, job counseling, job placement, and job coaching.

Many high schools for the disabled offer guidance in some of these areas, but most do not provide in-depth instruction in vocational guidance. In fact, many states, while they do have excellent vocational schools, preclude the attendance of students with disabilities by providing only instructional materials and curricula geared for regular education students. The special education high school graduate, therefore, may be faced with a "life after school" for which he or she is ill-prepared.

5. *Cognitive Rehabilitation*

The term cognitive rehabilitation refers to instruction in the basics related to cognition. Memory and language are two areas of emphasis.

While cognitive rehabilitation may benefit students having a wide range of disabilities, actual programs throughout the country concentrate on the cognitive rehabilitation of young adults with acquired disabilities due to accidents and stroke. For this population, it is imperative that the program be designed to facilitate the "relearning" of lost skills, which may be as basic as orienting oneself to the environment.

Within this population, students with prior disabilities are over-represented, being more at risk for acquired head trauma. This last point illustrates the need for secondary school curriculums for the disabled to include the goals of recognition and prevention of dangerous situations, with the acquisition of appropriate responses.

6. *Continuing Education*

Many high school graduates who are disabled hold down jobs quite successfully. Others do not. The notion of continuing education applies to both scenarios and is equally elusive to either.

The focus should be not only on improvement of skills, but also on adapting learned skills for self-improvement and/or promotion or retraining for employment in a new field. High school students, may graduate fairly well-trained for a specific career, only to find they do not like their job or cannot find a job in the field for which they were trained. Those secondary schools which expose their disabled students to a variety of potential career options increase their graduates' knowledge of job requirements and thus increase their graduates' chances for eventual job satisfaction.

Once on the job, continuing education is available through a variety of sources.

State agencies provide some training as do private companies— especially those with unions with some investment in the disabled. Continuing education may take the form of classes or on-the-job training. Job counseling and coaching may be included.

7. *Competitive Employment*

Many secondary schools recognize that they may represent the student's last opportunity for academic training or structured schooling. A large portion of graduates prepare to enter the job market directly from high school. It is necessary for these graduates to face the realities of life, which may include job hunting and interviewing, and possibly unemployment for a period of time. Many graduates are not properly prepared for this exploit. The over-representation of the disabled among the homeless and in shelters testifies to this fact. Students with emotional disabilities are especially vulnerable to becoming involved with the penal system.

This bleak picture is somewhat lightened by reports of schools that give students guided experiences in job seeking, interviewing, and internships. An important component of this preparation is social skills training and organization. Graduates must learn to conduct themselves in a manner that is acceptable to their workmates, customers, and employers. Secondary students contemplating competitive employment must learn: impulse control, timeliness, organization of materials and time, manners and personal grooming, as well as compensatory strategies for areas of special need.

8. *Sheltered Employment*

Students who are able to carry out guided employment, but are unable to work independently, may be productive employees within a variety of sheltered workplaces. Successful employees generally have two things in common: realistic expectations and sufficient social skills. Without either of these, chances for success in this setting are diminished. For most secondary students for whom this is a possibility, career training begins early, often in the middle school years.

While the decision to educate a student in a vocational track rather than an academic course is difficult enough, it is further complicated by the decision of when to begin vocational training. This decision must be based on input from a variety of sources. Consideration of student preferences and abilities, as well as parent, teacher, and therapist involvement all are critical to the decision-making process.

In some areas of the United States, sheltered employment is more readily available than in others. Often, it is available in conjunction with group living situations. The variety of settings differ as do their quality. Many employees in this type of setting come from a more restrictive, residential environment. These residential secondary school students should have IEPs with transition plans that reflect the skills necessary for the new setting. Employees of these sheltered programs may live in residential settings where social skills continue to be important. They may live in group homes or may live independently, commuting to work. Each setting produces a new set of requirements. The IEP must be tailored to provide the student with opportunities to acquire the skills necessary for the most appropriate environment.

How Are Transition Services Delineated In The IEP?

In order for students with disabilities to succeed in targeted post-school environments, their secondary school programs must be guided by IEPs that: accurately describe strengths and weaknesses as determined through assessment, and adequately delineate needs, services, and assessment criteria. In other words, the same criteria must be applied to the delineation of transition services as to any other IEP component.

This includes consideration of the least restrictive environment appropriate for delivery of these services. If anything, the importance of the least restrictive environment consideration is enhanced in the area of transition services, which often will include functional curricula that, by definition, are best delivered in natural, rather than segregated, settings.

For successful transition to occur, it is crucial that other agencies, such as the Department of Vocational Rehabilitation, become involved in the development of the IEP as early as possible, but in any event at least through the last two years of secondary education. Only in this manner can the necessary continuum of medical, psychological, and educational services be provided and duplication of assessments kept to a minimum.

The IEP should be comprehensive, defining areas of need in such a way that correct identification of the disability is inescapable and needed services are obvious. Because the IEP is, in effect, a "deficit document," all areas reflect a need for the individual to show progress All areas, then, may be viewed as necessary for successful transition. The assumption that an area labeled "Transition" can stand alone suggests that the remainder of the IEP is irrelevant to success after school.

In fact, the transition services requirement may well result in the inclusion in the IEP of areas previously excluded because they are deemed unnecessary to the student's satisfactory functioning while in the school environment. One example of such an area is the development of self-advocacy skills. Now, inclusion also is mandated if an area needs to be addressed in order to prepare the student for success in life beyond school.

Goals and objectives must be developed for each area of deficit and criteria must be outcome-oriented. Areas of deficit requiring goals and objectives must be specific to the individual rather than generic. Possible areas of deficit to be addressed include:

1. *Medical*

   The range of goals and objectives is as diverse as are the individuals this area describes. They may refer to an individual's developing abilities to: use special equipment, self-monitor medical needs, care for one's own daily physical/medical needs, seek and request information and assistance, and adapt to a variety of environments. Services range from medical monitoring to more full-time care of specific practitioners.

2. *Speech/Language*

   Goals and objectives in this area should result from specific evaluations and should be subject to criteria that include reassessment. Needs may be found in the areas of phonology (involving articulation), semantics (meaning), syntax (grammar), auditory processing, voice, oral motor, fluency, and, perhaps most importantly, pragmatics (function).

For many disabled students, this last area— which refers to the social use of language— is crucial. Deprivation of services in this area can result in otherwise language-competent individuals failing in social and work experiences. Gestures, body language, distance from speaker, turn-taking skills in conversation, relevance of topic, and ability to read the listener's level of understanding and interest are subtle, yet critical, factors.

Services may include: speech/language therapy, social skills and pragmatic groups, special equipment for voice modulation and dysfluency, and technology/methodology for augmentative communication.

3. *Sensory Motor*

Evaluations in the areas of gross and fine motor coordination, tactile, kinesthetic, and proprioceptive feedback include: ambulation, range of movement, physical education and recreation, movement, normalization of reaction to tactile input, and body awareness and stability. Services in this area may include: occupational therapy, physical therapy, and adaptive physical education.

4. *Visual Motor*

Visual motor evaluations usually are administered by an occupational therapist and may identify needs in the areas of compensatory visual skills, use of special technology/methodology, visual discrimination/perception, visual attention/memory, and visual motor integration. For high school students, objectives in the visual motor area should be as specific as possible. For example, a student with poor graphomotor (handwriting) skills, may have an objective relating to the development of keyboarding ability. Services may include occupational therapy and vision training.

5. *Academic*

Yearly educational testing and staff observations contribute input to the development of goals and objectives in this area. Deficits in the areas of mathematics, reading, and written language range from needs that are quite basic to the more sophisticated. For example, in math, one student may need to concentrate on more functional math skills, such as telling time or reading the calendar, while another may be tackling algebraic concepts. Services always should include the special education teacher and also may include tutors or reading specialists.

6. *Cognition*

Components such as the ability to use critical thinking skills and abstract concepts, and skills in the areas of organization, attention and memory are significant to success after school. Whether a graduate is entering postsecondary school or entering the world of work, such skills as planning time and attention to task are invaluable. Special educators generally are listed as service providers and criteria generally are performance-based.

7. *Daily Living Skills*

The areas of self-help skills, transportation, use of leisure time, decision making, home maintenance, consumer skills, use of public services and agencies, child care, budgeting, banking and taxes, health and safety, and abstention from use of dangerous substances all are important to the individual who will be enjoying some measure of independent living. The special educator and hands-on experience are the most critical factors for becoming competent in these areas.

8. *Social/Emotional*

All too frequently, the student with disabilities leaves the school setting with skills adequate to function in the chosen post-school setting, but fails due to the inability to get along with others.

The individual may be oppositional, impulsive, depressed, rigid, or simply unable to "read" and interpret the nuances of social interaction. These deficits interfere with making and keeping friends, getting along with peers, and keeping a job.

Goals and objectives in this area are difficult to measure, but should be performance-based with baseline and progress data. The services of a school psychologist, psychiatrist, counselor, social worker, and special educator are typical, and options for services including individual, group, and/or family counseling can be specified.

9. *Pre-Vocational/Vocational*

Career awareness, the development of realistic expectations, self-advocacy, job interest and aptitude exploration, job-seeking skills (including interviews, applications and resumes), and work habits, attitudes, and behaviors are all important components of career courses and vocational programs. Career/guidance counselors, special educators, and vocational education specialists work with students in these areas. Work experiences, postsecondary exploration and the development of relationships with outside agencies are indispensable for successful transition.

While no current regulations mandate or define the responsibilities of agencies other than educational agencies in the area of transition, the development of successful relationships between these agencies and the school during the high school years must not be underestimated.

Resources for assistance after graduation are scarce and often are difficult to locate. The student with disabilities often does not have the skills to make these connections, so the involvement of these agencies in the development of the IEP becomes even more necessary.

The Transition Process

...The process may be broken down into five components:

1. Identify the targeted post-school environment or environments for the student.
2. Identify the skills needed for the student to succeed in the targeted environment or environments.
3. Identify the services needed in order for the student to attain and apply these skills.
4. Identify and involve the appropriate service providers.
5. Develop a transition time line.

Each component of the transition process involves a number of steps, at least some of which are identified below. It must be noted, however, that each component represents an ongoing process in itself, and that these processes often will be concurrent or overlapping, as illustrated by the graphic attached as Appendix A. In other words, the components do not necessarily represent linear steps that will be followed to a conclusion. Rather, each component must be recognized as necessary to the total process, and must be brought into play as appropriate in light of the individual student's profile and circumstances.

1. *Identify Targeted Environment:*

There may be more than one targeted environment or a series of targeted environments for a particular student. As the student evolves and the transition team gathers more comprehensive information concerning both the student's needs and available options in the community, adjustments may be made. The idea is to target specifically enough to allow for meaningful delineation of services but not so specifically that future options are limited.

The steps involved in this component include at least the following: assessment, obtaining input from student and family, obtaining input from teachers and other service providers, and obtaining input from outside agencies (private business and/or postsecondary institutions).

2. *Identify Skills Needed For Success:*

As discussed above, a wide range of skills contribute to successful transition. Job skills alone will not be sufficient where interpersonal skills are lacking. Self-advocacy skills also are extremely important, and should be emphasized.[1]

The steps involved in this component include at least the following: assessment (or further assessment), obtaining input from teachers and other service providers, and obtaining input from outside agencies (private businesses and/or postsecondary institutions).

3. *Identify Necessary Services:*

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[1] At a minimum, students should be exposed to their rights under applicable federal laws such as The Rehabilitation Act of 1973 and The Americans With Disabilities Act. Under these laws, the person with a disability has the burden of making his or her needs known in order to benefit from the protection offered from discrimination on the basis of disability.

Involvement of other agencies, private businesses, and/or postsecondary institutions will become particularly critical at this stage. Once services are identified, steps must be taken to delineate responsibilities and provide appropriate follow-through, monitoring, and contingency planning.

The steps involved in this component include at least the following: obtaining input from student and parents, teachers, other service providers, and outside agencies (private businesses and/or postsecondary institutions); development of specific goals and objectives for the period covered by the IEP and identification of services needed to attain those goals and objectives, as well as identification of services needed to support the student after leaving school and implementation of these services before the student leaves the school environment. Examples might be psychological counseling, self-advocacy training, and/or job coaching.

4. *Identify Service Providers:*

Involvement of outside agencies again is crucial in the context of this component. As stated above, clear and binding agreements covering the provision of needed services are indispensable. In selecting service providers, consideration should be given to the settings in which such services must occur in order to provide effective support for transition; e.g., a natural setting as opposed to a segregated one.

The steps involved in this component include at least the following: development of clear and binding interagency agreements that fairly and reasonably allocate responsibilities for service provision, obtaining input from student and parents, teachers and other service providers, other agencies, private businesses and/or postsecondary institutions, and involving outside agencies directly in IEP development, with clear delineation of responsibilities set forth in the resulting IEP.

5. *Develop A Transition Timeline:*

This component reflects the need for long-range planning acknowledged by Congress in adding the transition requirement to the IDEA. Although IEPs specify goals, objectives, and services for the period of one year, transition planning encompasses a longer period of time. As with other IEP components, transition services are not written in stone, but may be adjusted from year to year, or more often if necessary. Nevertheless, by definition, transition services involve longer-range goals and expectations. For the first time, the IEP must not only allow for success during school years but in the world beyond school. [2] A transition time line will be of assistance in planning and coordinating the activities needed to achieve targeted adult outcomes.

The steps involved in this component include at least the following: obtaining ongoing input from the student and parents, teachers and other service providers, outside agencies, private businesses, and/or postsecondary institutions focusing on long-range goals.

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[2] This outcome-oriented model raises the question of whether increased claims for compensatory education may result if services are not properly delineated or delivered and the student is not equipped to succeed in the targeted adult environment at the time he or she normally would leave the school setting.

STEPS IN THE TRANSITION PROCESS

1. Assessment of student skills and interests.
2. Identify the targeted post-school options.
3. Determine eligibility requirements for the options.
4. Identify necessary services.
5. Identify specific service providers.
6. Develop a transition time line.
7. Conduct a systematic evaluation of the transition program.

ASSESSMENT

- Rationale for assessment.

- Two-level approach:

    1. First level of assessment (mild disabilities).

    2. Second level of assessment (moderate to severe disabilities).

TRANSITION OH-6

POSTSECONDARY OPTIONS

- College or university.
- College preparation courses.
- Vocational schools (applied technology centers).
- Vocational rehabilitation and independent living.
- Competitive employment.
- Job coaching.
- Sheltered employment.

TRANSITION OH-7

IEP PROCESS FOR TRANSITION

- Transition services must meet the same criteria as other IEP components.
- Who should be involved in transition planning?
- Consent forms for release of information to outside agencies.
- Specific transition goals.
- Areas of deficit.

SPECIFIC TRANSITION GOALS

- Education
- Vocation
- Independent living
- Community
- Agency responsibilities

AREAS OF DEFICIT

- Medical
- Speech and language
- Sensory/motor skills
- Visual/motor skills
- Academic skills
- Cognitive skills
- Daily living skills
- Social and emotional factors

TRANSITION OH-8c

CURRICULUM FOR TRANSITION

- Must be relevant, functional.

- Specific skills identified for the individual (IEP goals).

- Skills related to:
  - Academics
  - Independent living
  - Community participation
  - Employment
  - Self-determination
  - Social issues
  - Life-long learning

COMPONENTS OF CURRICULUM

- Best practices instruction
- Compensatory strategies specific for job:
    - Memory problems
    - Visual and auditory cues
    - Structuring the environment
    - Work space
- Information from family members
- Systematic monitoring

PROGRAM EVALUATION

Ongoing monitoring of:

- Transition goals
- Curriculum
- Student's progress
- Student's changing interests

TRANSITION OH-11